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It is a pleasure to present our 2008 annual report. If you have received our annual reports before, this one may come as a bit of a surprise. We decided to start doing things somewhat differently this year. We aimed to produce a leaner annual report. In this print report you can read about the highlights of our research programs, our ongoing longitudinal studies, our academic workplaces, our quality control and committees, and our scientific and societal achievements. We have tried to include the core information only in an easily accessible format.

But of course the EMGO Institute has not stopped its thorough documentation of our institute’s inputs and outputs in terms of organization, projects, staff, grants, publications, citations, doctoral theses societal impact and so forth. That more extensive information is readily available via our EMGO website (www.emgo.nl). Since this annual report comes in a new format, we are especially interested in your feedback and comments. You can reach us at secretariaat.emgo@vumc.nl.

Yours sincerely on behalf of the EMGO Institute,

Johannes Brug, PhD
Director
Introduction
The EMGO Institute is going strong. This annual report proofs that the EMGO staff has again realized significant and meaningful scientific output, as indicated by a large number of publications in important international journals, a stable high citation score, and success in acquiring new grants that will enable further research in the years to come. EMGO welcomed four new full professors in 2008, with chairs in general practice, physical activity and health in older persons, health promotion and health policy, and participation of patients and the general public in health care decisions, and we helped to get 36 PhD students to complete and defend their theses. The fact that this was achieved in a year in which we intensively prepared for a major life-event in the history of the EMGO Institute, is an indication of the strength and rigor of the institute. In 2009 our institute will transfer into the interfaculty EMGO Institute for Health and Care Research, or ‘EMGO+’ in short. This new institute is an ‘interfaculty’ research institute because it will bring researchers from three faculties together, aiming to further improve public and occupational health, primary care, rehabilitation and long-term care, by means of multi and interdisciplinary research. This 2008 annual report shows that we can give EMGO+ a good start. In this first chapter, please read about our mission, goals and strategy. Thereafter, separate chapters will report on the organization and achievements of our four research programs, EMGO’s scientific output and societal impact, EMGO’s committees that help us to ensure good quality control and strategic planning, our financial conditions and a list of our scientific publications.

Mission
EMGO’s mission is excellence in research in public and occupational health, primary care, rehabilitation and long-term care.

More specifically, by fulfilling its mission EMGO is aiming to contribute to improving evidence based:
- public and occupational health;
- primary health care;
- rehabilitation practice;
- long-term health and health care.

In these fields the institute aims to contribute to:
- strengthening the evidence-base for current ongoing practices;
- innovation of practice;
- innovation of relevant research methodology;
- provide input and direction for education and training for researchers and practitioners.
Strategy
EMGO contributes to the evidence-base of prevention and care by generating and disseminating evidence. EMGO’s aim is to perform transdisciplinary research of both high scientific quality and high societal relevance. Research projects carried out at the EMGO Institute mainly have a health outcome or health determinants as primary endpoints of interest. Many studies are executed within large population-based cohorts and many projects are carried out in general practices, nursing homes or homes for the elderly. Other studies recruit patients in an occupational setting or in outpatient departments, or survey a sample of the general population. A wide scope of methodological expertise is available within the institute, ranging from epidemiological and biostatistical methods to qualitative approaches. EMGO is involved in Master and PhD programs in epidemiology and public health research.
Operation
EMGO is one of five research institutes of the VU University Medical Center (VUmc). In 2008, EMGO was led by a management team consisting of the director Johannes Brug, two vice directors, Willem van Mechelen and Giel Nijpels, supported by a financial manager (Michel Telkamp) and a policy officer (Iris Strating). EMGO hosts investigators based in research groups and departments of VUmc, the VU University Amsterdam and affiliated organizations. All research projects are grouped in one of our four research programs, each led by two or three program directors:

1. Lifestyle, Overweight and Diabetes
2. Mental Health
3. Quality of Care
4. Musculoskeletal Health

EMGO only accepts and supports research studies that fit well within one of these programs, and that have rigorous methodology and sufficient financial support. Studies that are embedded within EMGO are supervised by a full professor, advised by at least one senior tenured staff member, and guided and supported by a formal research quality control infrastructure. EMGO conducts a self-evaluation each three years to reflect on its strengths, weaknesses, opportunities and threats, to monitor trends in input and outputs of the institute, in order to inform new policy plans. Each six years EMGO undergoes an external evaluation, in line with the Standard Evaluation Protocol from the Netherlands Academy of Arts and Sciences.
3.1. Lifestyle, Overweight and Diabetes

Program directors:
Ms. Prof. J.M. Dekker, PhD, Prof. W. van Mechelen, MD, PhD, Prof. J C. Seidell, PhD

Contributing disciplines: biostatistics, dietetics, endocrinology, epidemiology, general practice, human movement sciences, internal medicine, medical psychology, ophthalmology, social medicine.

Mission
Overweight and diabetes are two of the main public health problems of our society and are strongly linked to common determinants such as physical inactivity and poor dietary habits. This research program is aiming to curb the obesity and diabetes epidemics by identification of the primary lifestyle and biological determinants and efficient ways to improve lifestyle in the context of chronic disease management.

Specific research themes are:
- 1. Pathophysiological research into determinants of overweight and diabetes. This includes biological, genetic and behavioral determinants and their interrelations. These issues are studied in prospective cohort studies as well as in clinical trials.
- 2. Prevention by modification of unhealthy lifestyles with a particular emphasis on improving diets and promoting physical activity. This is studied in different settings such as communities, schools and workplaces.
- 3. Effectiveness and efficiency of health care aimed at chronic disease management of obesity and type 2 diabetes mellitus. This is studied in general practice and ‘academic workplaces’ with collaborations in primary care, occupational care, municipal health services and medical specialists.

Rationale and focus
Physical inactivity and overweight are two important modifiable factors contributing to the development of diabetes and cardiovascular disease. The program Lifestyle, Overweight and Diabetes (LOD) combines the expertise of the pathophysiology and epidemiology of metabolic and cardiovascular abnormalities, public health and prevention programs and the development of effective models of health care.
HIGHLIGHTS 2008

An example project

The Hoorn meal study. Funded by Merck USA.
The RISC study. Funded by the European Commission

In 2008, the 5th follow-up of a population based cohort study, the Hoorn Study, was completed. This follow-up focuses on the high risk of heart failure in patients with type 2 diabetes, and measurements included echocardiography. In 2008 the analyses of the RISC study, a study on the influence of insulin resistance in an European cohort of healthy people, was completed and several papers were published. The studies showed that insulin resistance is an important risk factor for cardiovascular disease, but it is not the single underlying cause, as has been the leading paradigm for the last 10 years. The Hoorn-meal study, a study of meal induced metabolic processes was also completed in 2008. A comparison of 75 g oral glucose tolerance test and a mixed meal test, showed that glucose levels following a meal are closely related to atherosclerosis.

A paper of importance


This study aimed to compare the associations of postprandial glucose (ppGL) and postprandial triglycerides (ppTG) with carotid intima media thickness (cIMT) in women with normal glucose metabolism (NGM) and type 2 diabetes (DM2). Postmenopausal women (76 with NGM, 78 with DM2), received two consecutive fat-rich and two consecutive carbohydrate-rich meals on separate occasions. Blood samples were taken before and 1, 2, 4, 6 and 8h following breakfast; lunch was given at t=4. Ultrasound imaging of the carotid artery was performed to measure cIMT. In women with NGM, an increase of 1.0 mmol/l glucose following the fat-rich meals was associated with a 50 microm cIMT increase (p=0.04), and following the carbohydrate meals, an increase of 1.8 mmol/l glucose was associated with a 50 microm larger cIMT (p=0.08). These associations were not explained by classical cardiovascular risk factors. However, no association between ppGL and cIMT was found in women with DM2 and ppTG were not associated with cIMT. The association between ppGL and cIMT in normoglycaemic women suggests that ppGL in the normal range is a marker or a risk factor for atherosclerosis. Postprandial glucose levels might be a better indicator of risk than post-OGTT glucose levels or triglyceride levels.
An example of societal impact

Guidelines, protocols, and actions to tackle overweight and diabetes.

The results of the research carried out in the LOD program are used for clinical and public health practice. Between 2006 and 2008 several researchers contributed to the development of the official guidelines for overweight and diabetes prevention and care.

Jaap Seidell and Tommy Visscher were members of the panel developing the National Institute of Health Quality (CBO) guidelines for overweight. The national guidelines for diabetes of the Dutch College of General Practitioners were revised and updated in 2006, incorporating results from our recent cohort studies. Giel Nijpels (Department of General Practice) was a member of the panel developing the revised guideline.

To help implement a main objective of the Dutch Ministry of Health, Welfare and Sport to reduce the prevalence of overweight, obesity and related chronic diseases in The Netherlands, the Partnership Overweight Netherlands (PON) was initiated in 2008. The partners of the PON are 17 national organizations of health care providers, health insurance companies and patient organizations. Jaap Seidell chairs the PON.

Jacqueline Dekker and Marjan Alssema took the lead in the development of the Prevention Consultation, a standard for use in primary health care (NHG standaard), in collaboration with the Dutch College of General Practitioners, the Netherlands Heart Foundation, Netherlands Diabetes Research Foundation, and the Dutch Kidney Foundation.

Jacqueline Dekker was a member of the writing committee of the joint ‘Practical Guidance on the Prevention of Cardiovascular Disease and Diabetes in People with Severe Mental Illness’, of the Association of European Psychiatrists, the European Society of Cardiology and the European Association for the Study of Diabetes.
Scientific output

Table 1: Total number and quality of peer-reviewed publications in 2008 – LOD

<table>
<thead>
<tr>
<th>Lifestyle Overweight and Diabetes</th>
<th>Proportion of publications in journals with a top quartile impact factor</th>
<th>54%</th>
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<tbody>
<tr>
<td></td>
<td>Total number of indexed international articles published</td>
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<tr>
<td></td>
<td>Total number of non-indexed international articles published</td>
<td>12</td>
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<tr>
<td></td>
<td>Total number of doctoral theses</td>
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Table 2: Acquisition in 2008 (in k€) and the annual average in 2004-2008 per type of funding – LOD

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<thead>
<tr>
<th>Lifestyle, Overweight and Diabetes</th>
<th>Acquisition 2008</th>
<th>Acquisition 2004-2008</th>
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<td>Direct Funding</td>
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<td>Contract Funding</td>
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<td>Business Funding</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1.689,0</strong></td>
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### Senior scientific staff and post docs*

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<thead>
<tr>
<th>Name</th>
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<tr>
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<tr>
<td>Ms. M.J. Alssema, PhD*</td>
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<td>Ms. M.A.E. van Bokhorst – van der Schueren, PhD</td>
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<td>Ms. S.D.M. Bot, PhD*</td>
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<td>I. Brouwer, PhD</td>
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<td>Prof. J. Brug, PhD</td>
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<td>Ms. A.M.W. Bulk-Bunschoten, PhD</td>
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<td>Ms. M.J.M. Chin a Paw, PhD</td>
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<td>Ms. Prof. J.M. Dekker, PhD</td>
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<td>Ms. J.C. Dekkers, PhD*</td>
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<td>Ms. M. Diamant, MD, PhD</td>
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<td>Ms. C. Doak, PhD</td>
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<td>M.D. Dubbelman, PhD*</td>
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<td>Ms. E.M.W. Eekhoff, MD, PhD</td>
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<td>Prof. R.J. Heine, MD, PhD</td>
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<td>Ms. I.J.M. Hendriksen, PhD</td>
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<td>Prof. R.A. Hira Sing, MD, PhD</td>
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<td>Ms. Prof. M. Hopman-Rock, PhD</td>
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<td>Ms. J.G. Hugtenburg, PhD</td>
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<td>Ms. W. IJzelenberg, PhD*</td>
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<td>Prof. M.B. Katan, PhD</td>
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<td>L.L.J. Koppes, PhD*</td>
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<td>P.J. Kostense, PhD</td>
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<td>Ms. H.M. Kruizenga, PhD</td>
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<td>Prof. W. van Mechelen, MD, PhD</td>
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<td>Prof. G. Nijpels, MD, PhD</td>
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<td>Ms. M.R. Olthof, PhD</td>
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<td>Ms. Prof. B.C.P. Polak, MD, PhD</td>
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<td>Ms. M.N.M. van Poppel, PhD</td>
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<td>F. Pouluer, PhD</td>
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<td>Ms. K.I. Proper, PhD*</td>
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<td>Ms. C.M. Renders, PhD</td>
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<td>Ms. J.M. Rijkelijkhuizen, PhD*</td>
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<td>Ms. S.R. de Rooij, PhD*</td>
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<td>Ms. Prof. A.J. Schuit, PhD</td>
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<td>Prof. J.C. Seidell, PhD</td>
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<td>Ms. A. Singh, PhD*</td>
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<td>Prof. Y.M. Smulders, MD, PhD</td>
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<td>Ms. M.B. Snijder, PhD*</td>
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<td>Prof. F.J. Snoek, PhD</td>
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<td>Ms. A.M.W. Spijkerman, PhD*</td>
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<td>Ms. I. Steenhuis, PhD</td>
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<td>Prof. M.W. van Tulder, PhD</td>
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<td>Prof. J.W.R. Twisk, PhD</td>
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<td>Ms. S. te Velde, PhD*</td>
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<td>Ms. E. de Vet, PhD</td>
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<td>Ms. Prof. M. Visser, PhD</td>
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<td>T.L.S. Visscher, PhD*</td>
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<td>P.J.M. Weijns, PhD*</td>
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<td>Ms. L.M.C. Welschen, PhD*</td>
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<td>Ms. H.A.H. Wijnhoven, PhD*</td>
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<td>Prof. J.S. Yudkin, MD, PhD</td>
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</table>
Aartjan Beekman

Brenda Penninx

Pim Cuijpers
### 3.2. Mental Health

Program directors: Prof. A.T.F. Beekman, MD, PhD, Prof. P. Cuijpers, PhD, Ms. Prof. B.W.J.H. Penninx, PhD

Contributing disciplines: biostatistics, clinical psychology, epidemiology, general practice, medical psychology, psychiatry.

**Mission**

The research program Mental Health (MH) has as central objectives to encourage, initiate, conduct and publish excellent research to increase our understanding of mental health and stimulate evidence-based mental health care and prevention, thereby improving overall public health. The main focus is on major and common mental disorders, especially depressive and anxiety disorders.

**Specific research themes are:**

- 1. Observational research either in the community setting, the general practice setting, as well as the psychiatric care setting, that increases our evidence-base for the occurrence, the determinants and consequences of mental health disorders.

- 2. Intervention research that contributes to evidence-based information on innovative prevention and care interventions to improve mental health and reduce associated disability.

- 3. Education and training of researchers and clinical professionals in the field of mental health.

**Rationale and focus**

Common mental disorders, such as depressive and anxiety disorders, have a major impact on public health and are among the conditions with the world-wide highest disease burden. Consequently, prevention of mental health disorders as well as more effective treatment of mental health disorders is needed to further improve overall public (mental) health. By applying observational as well as intervention research, the mental health program contributes to a better evidence-base for the existence, prevention and treatment of mental health disorders. Research conducted by the MH program is truly interdisciplinary, and reflects collaboration between various disciplines and departments such as psychiatry, general practice, clinical psychology, neurology, neurosciences, nursing home medicine, epidemiology and biostatistics.
**HIGHLIGHTS 2008**

**An example project**

Treatment of chronically depressed patients: a multisite randomized controlled trial testing the effectiveness of ‘Cognitive Behavioral Analysis System of Psychotherapy’ (CBASP) for chronic depressions versus usual secondary care.

Funded by: The Netherlands Organization for Health Research and Development (ZonMw) and The Foundation for Christian Nursing of Mental Disorders (VCVGZ).

Chronic MDD (major depressive disorder) causes a greater illness burden, more suicide attempts and more hospital admissions compared to acute non-chronic MDD. In outpatient mental health populations, chronic MDD affects an estimated 25-35% of depressive patients. Unfortunately, the treatment results for this group of patients are often disappointing and the existing treatment protocols are insufficiently tailored to chronic MDD. For this reason, an effective psychotherapeutic treatment will constitute a welcome addition to the range of treatments currently available for chronically depressed patients.

‘Cognitive Behavioral Analysis System of Psychotherapy’ (CBASP) is a form of psychotherapy specifically developed for patients with chronic depression. In a study in the U.S., remarkable favorable effects of CBASP have been demonstrated. However, no other studies have as yet replicated these findings and CBASP has not been tested outside the U.S. In this study, CBASP in combination with medication, will be tested versus usual secondary care in combination with medication. The aim is to recruit 160 patients from three different mental health care organizations in the Netherlands. Depressive symptoms will be assessed at baseline, after 8 weeks, 16 weeks, 32 weeks and 52 weeks, using the 28-item Inventory for Depressive Symptomatology (IDS). The study will provide an answer to the question whether the favorable effects of CBASP can be replicated outside the US.

**A Paper of importance**


Depression has been hypothesized to result in abdominal obesity through the accumulation of visceral fat, but no large study has tested this hypothesis longitudinally. We examined whether depressive symptoms predicted an increase in abdominal obesity in a large population-based sample of 2088 well-functioning white and black older persons, aged 70-79 years. Participants were part of the Health, Aging, and Body Composition Study, an ongoing prospective cohort study, with 5 years of follow-up.
Baseline depression was defined as a Center for Epidemiological Studies Depression (CES-D) score of ≥ 16. At baseline and after 5 years, overall obesity measures included body mass index and percent body fat (measured by dual energy x-ray absorptiometry). Abdominal obesity measures included waist circumference, sagittal diameter, and visceral fat (measured by computed tomography). After adjustment for sociodemographics, lifestyle, diseases and overall obesity, baseline depression was associated with a 5-year increase in sagittal diameter and visceral fat. Depression was not associated with increases in overall obesity. This study shows that depressive symptoms result in an increase in abdominal obesity, independent of overall obesity, suggesting that there may be specific pathophysiological mechanisms which link depression with visceral fat accumulation. These results might also help explain why depression increases risk of diabetes and cardiovascular disease.

An example of societal impact
In a collaborative project of broadcasting company “Teleac/Not”, GGZ InGeest (a mental health institute in Amsterdam which is one of the academic work places for EMGO) and researchers of the EMGO Institute (from the Departments of Clinical Psychology and Psychiatry), a series of television broadcastings was realized about phobias. This series, with the title “Angst de baas; Doe het zelf” (control your anxiety), was aimed at people with a social phobia, agoraphobia or a specific phobia. This series has now been broadcasted twice in The Netherlands. The goal of the series was to help people with a phobia to reduce their anxiety. As a support for those who watched the series, a self-help book was written (M. de Neef en P. Cuijpers. Fobieën. Amsterdam: Boom, 2007). In this book, the reader can learn how to apply an evidence-based treatment of phobias (exposure) to him- or herself. At this moment, we are translating this self-help method to an internet-based guided self-help system, which can be applied in primary and secondary health care and which will be examined in a randomized controlled trial.
three

RESEARCH PROGRAMS

Scientific output

Table 3: Total number and quality of peer-reviewed publications in 2008 - MH

<table>
<thead>
<tr>
<th>Mental Health</th>
<th>Proportion of publications in journals with a top quartile impact factor</th>
<th>57%</th>
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<tbody>
<tr>
<td></td>
<td>Total number of indexed international articles published</td>
<td>98</td>
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<tr>
<td></td>
<td>Total number of non-indexed international articles published</td>
<td>13</td>
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<tr>
<td></td>
<td>Total number of doctoral theses</td>
<td>10</td>
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</table>

Table 4: Acquisition in 2008 (in k€) and the annual average in 2004-2008 per type of funding - MH

<table>
<thead>
<tr>
<th>Mental health</th>
<th>Acquisition 2008</th>
<th>Acquisition 2004-2008</th>
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<tr>
<td>Direct Funding</td>
<td>539,5</td>
<td>592,5</td>
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<td>Contract Funding</td>
<td>5.186,5</td>
<td>1.577,7</td>
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<td>Business Funding</td>
<td>330,0</td>
<td>108,0</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>6.056,0</strong></td>
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Senior scientific staff and post docs*:

Prof. A.J.L.M. an Balkom, MD, PhD  
Prof. A.T.F. Beekman, MD, PhD  
Ms. C. van de Beek, PhD*  
A.W. Braam, MD, PhD  
Ms. H.C. Comijs, PhD  
Prof. P. Cuijpers, PhD  
Ms. Prof. D.J.H. Deeg, PhD  
Prof. J.J.M. Dekker, PhD  
Prof. Th.A.H. Doreleijers, MD, PhD  
Ms. R.M. Droës, PhD  
Prof. R. van Dyck, MD, PhD  
Prof. J.A. Eefsting, MD, PhD  
Ms. C.M. van der Feltz-Cornelis, MD, PhD  
Ms. A.M.F. Frederiks, PhD*  
Prof. M. van der Gaag, PhD  
Prof. M. de Haan, MD, PhD  
Ms. Prof. H.E. van der Horst, MD, PhD  
H.P.J. van Hout, PhD  
Prof. C. Jonker, MD, PhD  
Prof. A.J.F.M. Kerkhof, PhD  
Ms. E. Licht-Strunk, MD, PhD*  
H.W.J. van Marwijk, MD, PhD  
Ms. F.J.M. Meiland, PhD  
Ms. L.M.C. Nauta-Jansen, PhD  
Ms. P.C. van Oppen, PhD  
Ms. Prof. B.W.J.H. Penninx, PhD  
A. Popma, MD, PhD*  
Ms. Prof. A.M. Pot, PhD  
Prof. M.W. Ribbe, MD, PhD  
Ms. H. Riper, PhD*  
Ms. D.J.F. van Schaik, MD, PhD  
Prof. F.G. Schellevis, PhD  
Ms. G.A. Schreunders, PhD*  
Ms. J. Schuurmans, PhD  
F. Smit, PhD  
N. Smits, PhD  
B. Steunenberg, PhD*  
Ms. A. van Straten, PhD  
R.J. Takens, PhD  
B. Terluin, MD, PhD  
Prof. R.R.J.M. Vermeiren, MD, PhD  
S. Visser, PhD
three

RESEARCH PROGRAMS

3.3. Quality of Care

Program directors: Ms. Prof. M.C. Cornel, MD, PhD and Ms. B.D. Onwuteaka-Philipsen, PhD

Contributing disciplines: audiology, biostatistics, child- and adolescent psychiatry, clinical genetics, dietetics, epidemiology, general practice, medical psychology, nursing home medicine, ophthalmology, social medicine.

Mission

The research program Quality of Care (QoC) wants to improve the quality of prevention programs and healthcare services, empowering people to make informed health decisions, to prevent or delay the onset of chronic disease and disablement, to improve the quality of life of disabled patients, and of patients in their terminal phase.

Specific research themes are:

■ 1. Quality of care, shared decision making, and patient safety.
■ 2. Community genetics and risk communication.
■ 4. Functional autonomy and long term care.

Rationale and focus

A long, healthy life requires not only disease specific health care, but also attention for generic themes such as a healthy lifestyle and patient safety. QoC focuses on preventing disease before it even starts and on helping patients deal with generic problems that arise in the course of chronic illness. Our studies aim to help build the evidence-base to promote health in individuals, groups, and the population as a whole, in all phases of life, from preconception to the end of life.
three

RESEARCH PROGRAMS

HIGHLIGHTS 2008
An example project
Personal dignity at the end-of-life.
Funded by: Right to die-NL (NVVE) and Pieter van Foreest Foundation

Dignity is a term considered important in end-of-life care. Personal dignity refers to the worth we attach to ourselves and others attach to us. In palliative care, preserving dignity is frequently described as a goal of the care given. Loss of dignity has consistently been found as one of the most frequently mentioned reasons for a wish to die. Remarkably, there is lack of insight in what constitutes dignity and lack of empirical data on this issue. The aim of this study is gaining insight into the concept and the role of dignity in (expectations about) the end of life. Mixed methods are used. An existing cohort of 6500 people with an advance directive (AD), receiving a questionnaire every 1½ year is a strong quantitative framework. Sub samples have been drawn from this cohort for two qualitative studies using in-depth interviews. The first is to further explore what constitutes dignity. In the second study people with cancer, dementia, or ill health symptoms related to old age will be followed focusing on changes in sense of dignity over time. Using information from the qualitative studies, a quantitative measurement instrument for dignity at the end of life will be developed and refined to be subsequently used in further measurements in the study cohort.

A paper of importance

The aim of the study was to evaluate the benefit that listeners obtain from visually presented output from an automatic speech recognition (ASR) system during listening to speech in a noisy environment. The readability and benefit obtained from ASR word output (n=14) was compared with the benefit obtained from ASR phone output (n=10). The effect of delaying the presentation of the text was examined as well. Speech comprehension improved when the ASR output was displayed. When the ASR output corresponded to readability scores of only 20% correct, the text improved the speech reception thresholds by about 3dB. This improvement corresponds to an increase in speech comprehension of about 35% in critical conditions. Delaying the text decreased the benefit. Word outputs exceeded benefits from phone outputs. The authors conclude that speech comprehension improves considerably by textual ASR output with moderate accuracies. This improvement depends on the readability of the ASR output. Listeners are better able to use the ASR word output than phone output to improve speech comprehension. These results can be used to improve information exchange with patients with hearing impairment.
An example of societal impact
Screening: between hope and hype.

The Dutch Health Council in April 2008 issued a report on screening and early detection. For many years the EMGO Institute and especially the QoC program, has conducted research in this area. Martina Cornel was a member of the multidisciplinary committee that prepared this report. The government has great expectations of preventive health screening, as do caregivers, private individuals, and other groups within the healthcare sector. Developments are moving fast: new ways of screening and early detection are either being issued, tested or implemented within the public healthcare sector or are being marketed by commercial organizations. Screening and early detection may have great health benefits, but almost always has drawbacks as well. New potentially worthwhile screening initiatives should therefore be tested and monitored to assess its effects, negative side effects and other potential pros and cons. In his letter on the issue of July 2008, the Dutch minister of Health presented his opinion. Finding the right balance between autonomy for citizens to choose for themselves which screening they want and the public duty to protect citizens against risks by regulating quality and safety is central is his view. An agenda for the future is set for further policy development.
three

RESEARCH PROGRAMS

Scientific output

Table 5: Total number and quality of peer-reviewed publications in 2008 - QoC

<table>
<thead>
<tr>
<th>Quality of Care</th>
<th>45%</th>
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<tbody>
<tr>
<td>Proportion of publications in journals with a top quartile impact factor for the relevant research field</td>
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<tr>
<td>Total number of indexed international articles published</td>
<td>94</td>
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<td>Total number of non-indexed international articles published</td>
<td>14</td>
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<tr>
<td>Total number of doctoral theses</td>
<td>9</td>
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</tbody>
</table>

Table 6: Acquisition in 2008 (in k€) and the annual average in 2004-2008 per type of funding - QoC

<table>
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<tr>
<th>Quality of Care</th>
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<th>Acquisition 2004-2008</th>
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<td>Direct Funding</td>
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<td>Contract Funding</td>
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<td>Business Funding</td>
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<td>Total</td>
<td>2.913,1</td>
<td>3.902,6</td>
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### Senior scientific staff and post docs*

<table>
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<tr>
<th>Name</th>
<th>Position and Degree</th>
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<td>W. Achterberg, PhD</td>
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<tr>
<td>P.D. Bezemer, PhD</td>
<td></td>
</tr>
<tr>
<td>Ms. M.A.E. van Bokhorst – van der Schueren, PhD</td>
<td></td>
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<tr>
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<td></td>
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<tr>
<td>Ms. M.C. de Bruijne, MD, PhD</td>
<td></td>
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<tr>
<td>D.J. Bruinvelds, MD, PhD</td>
<td></td>
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<tr>
<td>Ms. Prof. M.C. Cornel, MD, PhD</td>
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<tr>
<td>Ms. Prof. D.J.H. Deeg, PhD</td>
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<tr>
<td>Prof. L. Deliens, PhD</td>
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<tr>
<td>Ms. M.G. Dik, PhD</td>
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<td>M.A. Echteld, PhD</td>
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<td>Prof. J.A. Eefsting, MD, PhD</td>
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<td>Prof. J.M. Festen, PhD</td>
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<tr>
<td>Ms. B.J.M. Frederiks, PhD, LLM</td>
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<tr>
<td>D.H.M. Frijters, PhD</td>
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<td>E.L.J. George, PhD</td>
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<td>S.T. Goverts, PhD</td>
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<tr>
<td>Ms. L. Henneman, PhD</td>
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<tr>
<td>G.L. van der Heijde, PhD</td>
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<tr>
<td>C.M.P.M. Hertogh, MD, PhD</td>
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<td>Prof. R.A. Hira Singh, MD, PhD</td>
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<td>Prof. T. Houtgast, PhD</td>
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<tr>
<td>Ms. J.T. van Kampen – van der Steen, PhD</td>
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<td>Prof. H.C.G. Kemper, PhD</td>
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<td>Ms. S.E. Kramer, PhD</td>
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<td>F.J.M. van Leerdam, MD, PhD</td>
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<td>Ms. Prof. F.E. van Leeuwen, PhD</td>
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<tr>
<td>Prof. J. Legemaate, PhD, LLM</td>
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<tr>
<td>J. Lyzenga, PhD*</td>
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<td>Ms. Prof. Th. Marteau, PhD</td>
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<td>P. Merkus, PhD</td>
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<td>Ms. A.C. Moll, MD, PhD</td>
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<td>Ms. B.D. Onwuteaka-Philipsen, PhD</td>
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<tr>
<td>J. Oudhoff, PhD*</td>
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<tr>
<td>Ms. H.R.W. Pasman PhD*</td>
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<tr>
<td>Ms. A.M. Plass, PhD</td>
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<tr>
<td>Prof. G.H.M.B. van Rens, MD, PhD</td>
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<tr>
<td>Prof. M.W. Ribbe, MD, PhD</td>
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<td>Prof. P.J. Ringens, MD, PhD</td>
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<tr>
<td>Ms. M.L. Rurup, PhD*</td>
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<tr>
<td>T. Schellart, PhD, MBA</td>
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<tr>
<td>Prof. F.G. Schellevis, MD, PhD</td>
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<td>Prof. T. Smid, PhD</td>
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<td>J.C.M. Smits, PhD</td>
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<td>Prof. L.P. ten Kate, MD, PhD</td>
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<td>Ms. Prof. D.R.M. Timmermans, PhD</td>
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<td>M.S.M.G. Vlaming, PhD</td>
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<tr>
<td>H. de Vries, PhD</td>
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<tr>
<td>Ms. C. Wagner, PhD</td>
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<tr>
<td>Prof. G. van der Wal, MD, PhD</td>
<td></td>
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<tr>
<td>Ms. A.A. Zekveld, PhD*</td>
<td></td>
</tr>
</tbody>
</table>
3.4. Musculoskeletal Health

Program directors: Prof. J. Dekker, PhD and Ms. Prof. H.C.W. de Vet, PhD

Contributing disciplines: anaesthesiology, biostatistics, endocrinology, epidemiology, general practice, health sciences, human movement studies, occupational medicine, rehabilitation medicine, social medicine, sports medicine.

Mission
The research program Musculoskeletal Health (MSH) seeks knowledge about the development and lifelong maintenance of a healthy musculoskeletal system and about the occurrence, prognosis, treatment and prevention of musculoskeletal disorders.

Specific research themes are:
- 1. Development and maintenance of a healthy musculoskeletal system.
- 2. Occurrence, prognosis and treatment and prevention of musculoskeletal disorders and other physical symptoms.
- 3. Research methodology with focus on clinimetrics, prognosis, economic evaluations, and systematic reviews.

Rationale and focus
The program’s scope includes evidence-based practice in public health, occupational care, primary care, rehabilitation and sports medicine. Determinants of development of a healthy musculoskeletal system are studied in young adults and prevention of deterioration of the musculoskeletal system in the elderly. Methodological themes include development and evaluation of measurement instruments (clinimetrics), prognosis and prediction models, health technology assessment, systematic reviews of trials, of diagnostic and prognostic studies, and of the quality of measurement instruments.
HIGHLIGHTS 2008
An example project
Diagnosis and prognosis of hand and wrist problems in general practice.
Funded by: The Netherlands Organization for Health Research and Development (ZonMW)

Symptoms of the wrist or hand (pain, tingling, loss of function) are reported by 9 to 12% of the Dutch adult population, and have significant impact on daily activities and work performance. We studied the course of symptoms in people who consulted their general practitioner (GP) for these problems, and analyzed which factors best predicted poor outcome at 3 and 12 months follow-up.

A total of 267 patients participated in the study. Diagnoses most frequently registered by the GPs were tenosynovitis (19%) and osteoarthritis (18%). In about 20% of patients no specific diagnosis could be made, or multiple diagnoses were registered. Symptoms were persistent in most participants; more than 50% reported residual symptoms one year after consultation. Despite this persistence, most participants only consulted their GP once. Physical examination helped the GP to establish a diagnosis and decide on treatment, but provided little prognostic information. Other factors were more important predictors of persistent symptoms: being older, female, having a longer duration of symptoms at consultation, not coping well with the problem, and reporting other physical symptoms. This is the first prospective cohort study on hand/wrist problems in a primary care population. The results will inform national GP guidelines for hand/wrist problems, that are currently being developed.

A paper of importance

Vitamin D deficiency is common among older people and can cause muscle weakness and bone loss. Therefore, we examined whether low vitamin D levels (serum 25(OH)D) are associated with osteoporotic fractures.

The study was conducted among 1311 community-dwelling older men and women of the Longitudinal Aging Study Amsterdam (LASA), an ongoing multidisciplinary cohort study. Fractures were assessed during six years of follow-up.

In total, 11.3% of the persons had serum 25(OH)D levels below 10 ng/ml and 48.4% below 20 ng/ml. Furthermore, 115 persons (8.5%) had one or more osteoporotic fractures. Different cut-off points of serum 25(OH)D were examined with a cut-off point of 12 ng/ml giving the best discrimination between persons with and without fractures. After adjustment for confounding, serum 25(OH)D below or equal to 12 ng/ml was associated with an increased fracture risk in persons aged 65-75 years (HR=3.1; 95% CI: 1.4-6.9), but not in persons aged 75-89 years.
Interestingly, a similar cut-off point and age effect were found in an earlier LASA study which studied the relation between vitamin D deficiency and falls. In addition, an association with decreased physical functioning was found. These results point to a mediating role of decreased physical functioning and falls in the relation between low vitamin D levels and fractures.

An example of societal impact
Guidelines and protocols for shoulder pain.

The prevalence of shoulder pain in the Dutch general population is 21%. Over the past 10 years researchers from the program Musculoskeletal Health have carried out a series of studies on the diagnosis, prognosis and management of shoulder pain. The results of this research are now finding their way into clinical practice. In 2008 several researchers contributed to the development of guidelines for shoulder pain. Daniëlle van der Windt chaired a multidisciplinary group which developed a protocol for chronic shoulder pain for the Netherlands Association for Insurance Medicine. The protocol will guide insurance physicians in the assessment and social medical guidance of employees with chronic shoulder pain who have been on long-term sick leave.

The national guidelines for shoulder pain of the Dutch College of General Practitioners were revised and updated in 2008, incorporating results from our recent cohort studies. Joan Boeke and Daniëlle van der Windt (Department of General Practice) were members of the panel developing the revised guideline. Han Anema (Department of Public and Occupational Health) was one of the external reviewers of the GP guideline for shoulder pain. He also contributed to the development of a Podcast for work-related shoulder pain which can be used in the Continuing Medical Education of GPs.
three

RESEARCH PROGRAMS

Scientific output

Table 7: Total number and quality of peer-reviewed publications in 2008 - MSH

<table>
<thead>
<tr>
<th>Musculoskeletal Health</th>
<th>Proportion of publications in journals with a top quartile impact factor</th>
<th>67%</th>
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<td>Total number of indexed international articles published</td>
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<td></td>
<td>Total number of non-indexed international articles published</td>
<td>13</td>
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<tr>
<td></td>
<td>Total number of doctoral theses</td>
<td>10</td>
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</table>

Table 8: Acquisition in 2008 (in k€) and the annual average in 2004-2008 per type of funding - MSH

<table>
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<tr>
<th>Musculoskeletal Health</th>
<th>Acquisition 2008</th>
<th>Acquisition 2004-2008</th>
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<td>Contract Funding</td>
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<td>Total</td>
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<td>1,560,9</td>
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Senior scientific staff and post docs*:

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<th>Name</th>
<th>Title</th>
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<tr>
<td>J.R. Anema, MD, PhD</td>
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<td>Ms. I. Bakker, PhD</td>
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<tr>
<td>Ms. C.M. Bernaards, PhD*</td>
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<td>Ms. A.H. Blankenstein, MD, PhD</td>
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<td>Ms. B.M. Blatter, PhD</td>
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<td>A.J.P. Boeke, MD, PhD</td>
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<td>Ms. Prof. M. Hopman-Rock, PhD</td>
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<td>P. Jellema, PhD*</td>
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<td>D.L. Knol, PhD</td>
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<td>Prof. G.J. Lankhorst, MD, PhD</td>
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<td>Prof. P.Th.A.M. Lips, MD, PhD</td>
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<td>Prof. W. van Mechelen, MD, PhD</td>
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<td>Ms. N.M. van Schoor, PhD*</td>
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<td>Ms. Prof. H.C.W. de Vet, PhD</td>
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<td>Ms. Prof. M. Visser, PhD</td>
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<tr>
<td>Ms. D.A.W.M. van der Windt, PhD</td>
<td></td>
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</tbody>
</table>
Scientific output
In 2008 EMGO researchers co-authored 463 international scientific publications; a full list is printed on the final pages of this report. Additionally, 78 national scientific and professional publications were published. The independent bibliometric analysis of research papers in peer-reviewed international scientific journals as conducted by the Center for Science & Technology Studies (CWTS) in Leiden reports a ‘crown indicator’ of 1.83 for EMGO’s research. This reflects that the scientific impact of EMGO’s research is 83% above the world average in the scientific fields that EMGO’s research contributes to. In 2008 36 students defended their PhD theses. The total amount of 12.5 MEuro obtained in grant money in 2008 will help us to maintain our research activities in the years to come.

In 2008 our total number of scientific publications reached an all-time high. Although the proportion of publications in the top quartile journals of the relevant scientific fields was lower than in previous years, the total number of publications in these top journals was again somewhat higher.

Table 9: Total number and quality of peer-reviewed international publications, including letters to the editor in 2008

<table>
<thead>
<tr>
<th></th>
<th>Lifestyle, Overweight and Diabetes</th>
<th>Mental Health</th>
<th>Quality of Care</th>
<th>Musculoskeletal Health</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of indexed international articles published</td>
<td>110</td>
<td>98</td>
<td>94</td>
<td>109</td>
<td>411</td>
</tr>
<tr>
<td>Total number of non-indexed international articles published</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>13</td>
<td>52</td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td>111</td>
<td>108</td>
<td>122</td>
<td>463</td>
</tr>
</tbody>
</table>

Table 10: Proportion of publications in journals with a top quartile impact factor for the relevant research field 2004-2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Lifestyle, Overweight and Diabetes</th>
<th>Mental Health</th>
<th>Quality of Care</th>
<th>Musculoskeletal Health</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>41/56 (73%)</td>
<td>30/54 (56%)</td>
<td>59/91 (65%)</td>
<td>52/87 (60%)</td>
<td>182/288 (63%)</td>
</tr>
<tr>
<td>2005</td>
<td>58/80 (73%)</td>
<td>58/85 (68%)</td>
<td>70/115 (61%)</td>
<td>69/115 (60%)</td>
<td>255/395 (65%)</td>
</tr>
<tr>
<td>2006</td>
<td>39/57 (68%)</td>
<td>52/85 (61%)</td>
<td>58/94 (62%)</td>
<td>73/119 (61%)</td>
<td>222/355 (63%)</td>
</tr>
<tr>
<td>2007</td>
<td>64/91 (68%)</td>
<td>48/68 (71%)</td>
<td>48/80 (60%)</td>
<td>65/117 (56%)</td>
<td>225/355 (63%)</td>
</tr>
<tr>
<td>2008</td>
<td>59/110 (54%)</td>
<td>56/98 (57%)</td>
<td>42/94 (45%)</td>
<td>73/109 (67%)</td>
<td>230/411 (56%)</td>
</tr>
</tbody>
</table>
Table 11: Dissertations and publications during the period 2004-2008 per 10 FTE direct funded scientific staff excluding PhD students

<table>
<thead>
<tr>
<th>Year</th>
<th>Dissertations</th>
<th>Scientific publications international</th>
<th>Scientific publications national</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>8,1</td>
<td>96,1</td>
<td>20,3</td>
</tr>
<tr>
<td>2005</td>
<td>6,4</td>
<td>104,7</td>
<td>25,0</td>
</tr>
<tr>
<td>2006</td>
<td>11,7</td>
<td>118,8</td>
<td>25,0</td>
</tr>
<tr>
<td>2007</td>
<td>6,6</td>
<td>94,6</td>
<td>15,0</td>
</tr>
<tr>
<td>2008</td>
<td>7,3</td>
<td>90,9</td>
<td>15,9</td>
</tr>
</tbody>
</table>

Table 12: Top 10 citation toppers of the EMGO Institute in 2008

<table>
<thead>
<tr>
<th>Rank</th>
<th>Citation count</th>
<th>Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Note: This list contains articles on projects embedded in the EMGO Institute mentioned in any of the Annual Reports of which at least one of the authors is still working as a senior researcher at the EMGO Institute. The top 10 articles with the highest citations, according to the (Social) Science Citation Index on 16 March 2009, are included in the table.
Societal impact

EMGO produces excellent scientific research, but we really only fulfil our potential when that research benefits the society at large. Striving for societal impact not only justifies our use of public funds, but also gives EMGO direction. We use the Dutch Health Council proposed indicators of societal impact to evaluate and monitor our performance. In 2008 EMGO researchers worked on 41 clinical guidelines on various topics in the form of co-authorships. A detailed list of the clinical guidelines can be found on EMGO’s website. In 2008, EMGO staff was also involved as committee members or co-authors in the publication of 24 health policy reports on a great variety of topics. For a short overview of health policy reports, please be referred to www.emgo.nl. In addition to the clinical guidelines and health policy reports, there are trial reviews, national journal articles and books that we consider important for societal impact. These publications are listed in the publication list in chapter 10.

In 2008, the results of EMGO research projects attracted substantial attention from the media. Members of our staff were interviewed on national television about 11 times, and some 7 interviews on national public radio were broadcasted. Interviews and articles about research projects and their results were published locally or nationally in approximately 17 newspapers and 28 magazines and newsletters.

Another indicator of societal impact is the number of invitations EMGO staff receives to deliver lectures to healthcare professionals, policy makers and non-professionals. Topics covered in these presentations can be found on the website www.emgo.nl.

EMGO’s staff members sit on many boards and committees, of which a selection is also presented on EMGO’s website.

Members of our staff are frequently involved in teaching programs based on the results of EMGO projects. The most important contributions to the post-initial education of healthcare professionals are listed on www.emgo.nl. This list does not include the regular curriculum of medicine and health sciences.

The internet is arguably the most important source of health information. Therefore, websites can be highly relevant for measuring the societal impact of EMGOs’ research. The list of our most important websites is placed on the website. The websites are divided into five categories: practical information for the general public, research projects, research infrastructure, collaborating partners on the VU/VUmc campus, and external collaborating partners.
New professors
On April 11th Henriëtte van der Horst accepted her chair as head of the General Practice department of VUmc with her inaugural address. Henriëtte van der Horst stressed the importance of multidisciplinary collaboration in research in order to improve the practice of the general practitioner. On October 10th Jantine Schuit accepted her professorship in health promotion and health policy. Her expertise covers both effectiveness of individual lifestyle interventions as well as community based interventions. Marijke Hopman-Rock, PhD was appointed honorary professor at the EMGO Institute for: ‘Physical Activity and Health in Older Persons’ on November 18th. This new professorship further confirms EMGO’s strong focus on research relevant for our aging society. On June 1st 2008 Daniëlle Timmermans was appointed professor in ‘Participation of Patients and the General Public in Health Care Decisions’. This chair further shows EMGO’s research focus on patient perspectives within our Quality of Care research program.

EMGO Awards
The EMGO awards are traditionally announced during the annual EMGO retreat, which was held on April 22nd. Petronella van ’t Veer-Tazelaar received the Science Award for the best scientific paper by a junior researcher, for her paper on ‘stepped-care prevention of anxiety and depression in later life’. The Societal Impact Award was given to Nannah Tak for her work on the evaluation of fruit and vegetable schemes in primary schools.
Table 13: Publications that have won the EMGO Science Award in 2004-2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Publication</th>
</tr>
</thead>
</table>

Note: This list contains the articles that have won the annual EMGO Award since 2004. Please be referred the website [www.emgo.nl](http://www.emgo.nl) for the complete list.

For this competition, junior researchers at the EMGO Institute may submit one article published or accepted for publication during the year prior to the deadline for submission. Members of the advisory board and the scientific committee judge the articles according to a predefined criteria list, with strong emphasis on the relevance for EMGO’s mission.
### Table 14: Research products or activities that have won the EMGO Societal Impact Award in 2004-2008

<table>
<thead>
<tr>
<th>Year</th>
<th>Product</th>
</tr>
</thead>
</table>
| 2008 | Ms. N.I. Tak, MSc  
Evaluation of fruit and vegetable schemes in primary schools, based on the ‘Schoolgruiten’ and ‘Pro Children’ projects |
| 2007 | Ms. H.M. Kruizenga, PhD  
SNAQ: Short Nutritional Assessment Questionnaire (the development of a simple screening instrument) |
| 2006 | F. den Hertog, PhD  
‘De gezonde wijk’ (The healthy neighbourhood in Amsterdam – guidelines) |
| 2005 | Ms. B.A.M. The, PhD  
In de wachtkamer van de dood. (In the waiting room of death; ISBN 9080811378) |
| 2004 | Ms. R.M. Droës, PhD & Ms. F.J.M. Meiland, PhD  
Conditions for successful implementation of meeting centres for people with dementia and their carers. |

Note: This list contains the products that have won the Societal Impact Award since 2004. Please be referred the website [www.emgo.nl](http://www.emgo.nl) for the complete list.
## Personal Grants and Awards

In 2008 a number of EMGO colleagues were able to obtain prestigious prizes or personal grants.

Table 15: Personal awards, grants and prizes received by EMGO investigators

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Award/Grant/Prize</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.R. Anema, MD, PhD</td>
<td>Video Award winner Bio-psychosocial &amp; work related factors involved in back pain</td>
<td>International Festival of Medical &amp; Health Films and Telemedicina in Spain</td>
</tr>
<tr>
<td>Prof. A.J.L.M. van Balkom, MD, PhD</td>
<td>Marina de Wolf Award</td>
<td>Patient organisation on Anxiety disorders in the Netherlands</td>
</tr>
<tr>
<td>Drs. L. van den Block</td>
<td>McKinsey Price End-of-life care and medical decision-making in the last phase of life</td>
<td>National Foundation of Scientific Research Vlaanderen</td>
</tr>
<tr>
<td>Ms. M.E. de Boer, MSc</td>
<td>Best Dutch submission Use of advance directives in dementia: the patient’s perspective</td>
<td>5th European Association for Palliative Care (EAPC) forum</td>
</tr>
<tr>
<td>J. Cohen, PhD</td>
<td>Prix Elizabeth Kübler-Ross End-of-life decisions and place of death in Europe</td>
<td>Swiss Institut Universitaire Kurt Bösch</td>
</tr>
<tr>
<td>Ms. B.D. Onwuteaka-Philipsen, PhD</td>
<td>Patient perspective in end of life care: dignity, preferences and participation</td>
<td>Netherlands Organisation of Scientific Research (NWO) VICI subsidy</td>
</tr>
<tr>
<td>Ms. L.A. Schaap, MSc</td>
<td>Poster award 2nd prize Low Testosterone concentrations in elderly women: Association of physical deterioration and muscle strength loss</td>
<td>Dutch Society for Gerontology (NVG)</td>
</tr>
<tr>
<td>F. Smit, PhD</td>
<td>CaRe “Best Dissertation, 2007” Award Prevention of Depression</td>
<td>Netherlands School of Primary Care Research (CaRe)</td>
</tr>
<tr>
<td>Prof. F.J. Snoek, PhD</td>
<td>1st Diabetes Research Award The psychosocial aspects of Diabetes</td>
<td>Diabetes Fund</td>
</tr>
</tbody>
</table>
International Collaboration

Diabetes and overweight, musculoskeletal disorders, mental health problems, and quality of care issues are of international importance, and excellent scientific research requires an international arena. EMGO researchers participate in diverse international scientific networks, collaborate intensively with international colleagues, participate in and help lead a range of relevant international societies, and sit on editorial boards of different international scientific journals (see www.emgo.nl for more information). In this brief annual report we would like to explicitly mention four highlights in international collaboration in 2008.

- The department of Public and Occupational Health organized the International Congress on Physical Activity and Public Health in Amsterdam in 2008.
- In 2008 the VUmc’s and EMGO’s first formal visiting professorship was granted to David Crawford, head of school of Exercise and Nutrition Sciences at Deakin University in Melbourne Australia.
- In 2008 EMGO was successful in acquiring European Commission (EC) funding as a participating partner in 4 projects. Furthermore, for the first time EMGO obtained funding for a EC 7th framework project as the coordinating center. This ‘ENERGY’ project will start in 2009, aiming to develop evidence-based obesity prevention schemes for school-aged children.
- Joost Dekker was appointed as visiting professor (‘dosent’) at the Faculty of Sport and Health Sciences, University of Jyväskylä, Finland.

More detailed lists of international collaboration per program can be found at www.emgo.nl
During the past decade, EMGO has become a significant research institute, both nationally and internationally, with good scientific quality and relevant societal impact. EMGO’s greatest strength – multidisciplinary applied research in healthcare and prevention with high societal relevance – will be maintained in future years. EMGO will continue to concentrate on aging and chronic diseases, and on further developing and extending academic networks for general practice, nursing-home medicine, public and occupational health, youth health care, mental health care, and rehabilitation.

EMGO also anticipates that primary healthcare and prevention will increasingly operate according to the principles of evidence-based medicine, which has applied research at its core. Clinical efficacy as well as cost-effectiveness will guide policy choices related to primary care and prevention. The resulting guidelines for prevention, diagnosis, and therapy will often transverse the traditional boundaries between extramural and intramural care.

**Interfaculty Research Institute**

EMGO’s mission requires an inter- and transdisciplinary research approach. In 2009 EMGO will become ‘EMGO+’, an interfaculty and therefore even more transdisciplinary research institute, as we will formally join forces with strong research groups in the fields of psychology and education as well as health sciences, building on already established collaborations and supported by a 3.6 MEuro grant from the VU University.

In 2009 EMGO thus will become EMGO+: The EMGO Institute for Health and Care Research. The participating faculties and research groups within EMGO+ will be:

- 1. The present EMGO Institute, in which the VUmc departments of Epidemiology and Biostatistics, General Practice, Nursing Home Medicine, Psychiatry, Public and Occupational Health and Rehabilitation Medicine have concentrated most of their research efforts with additional contributions from a number of other VUmc departments;
- 2. The department of Health Sciences of the faculty of Earth and Life Sciences;
- 3. The departments of Clinical Psychology, Biological Psychology, Developmental Psychology and Special Education of the faculty of Psychology and Education.
Collaboration within the VU/VUmc Campus

EMGO will further strengthen its collaboration with the other VUmc research institutes, and all signs indicate that the interest is mutual. EMGO already collaborates with the other (interfaculty) research institutes led by the VUmc and we expect further projects in which fundamental, translational and applied research are combined. Our work with CCA/V-ICI, the Oncology and Immunology Institute, is in the process of further extension in the fields of research on palliative care and rehabilitation programs and social support for cancer patients. Our collaboration with the movement sciences institute MOVE is explicit in joined projects and research meetings. With the Neurosciences Campus Amsterdam, we share a focus on mental disorders and have joined projects, with the Netherlands Study of Depression and Anxiety as the main example. In 2008 the exciting new initiative to develop a midwifery science group within the quality of care program was prepared. This joint initiative with the Professional Midwifery Education Foundation and the Netherlands Institute for Health Services Research (NIVEL) will result in a nation wide study to investigate and build an evidence base for midwifery care in the Netherlands.
The EMGO Institute, with its focus on public and occupational health, primary care, rehabilitation practice and long term care is active in research fields of great societal relevance. Research in these fields requires transdisciplinary collaborations as well as methodological innovations and combinations. We believe that EMGO flourishes in this exciting research environment because we try to combine formalized and established quality support and control, and methodological strength, with a true interest in applied research. Our quality support and control is supported by our standing committees, and our methodological expertise is guarded and further developed by dedicated research staff. Our true applied character is maybe best illustrated by the establishment and continuation of a number of ‘academic workplaces’ and research centers where science and practice actually meet. Furthermore, EMGO much profits from our ongoing longitudinal studies.

STANDING COMMITTEES
The aim of the institute is to excel on criteria for scientific quality, as well as on criteria for societal impact. To this end, a Scientific Committee, a Quality Committee and a PhD Committee have been established.

Scientific Committee
In 2008 the members of the scientific committee were: Sandra Bot (chair), Judith Bosmans, Miranda Dik, Sophia Kramer, Piet Kostense, Harm van Marwijk, Els Licht-Strunk, Mireille van Poppel, Karin Proper, Mette Rurup, Anneke van Schaik, Martijn Steultjens, Bas Steunenberg, Emely de Vet and Daniëlle van der Windt.

In the scientific committee a group of EMGO’s senior staff meets every two weeks. Mireille van Poppel was chair of the scientific committee until July 1st 2008. Sandra Bot has chaired the committee since. Each of EMGO’s research programs is represented by two members in the scientific committee. The scientific committee advises the directorate about research related issues and the quality and the appropriateness of all new research proposals brought forward by researchers for inclusion in the research programs. In 2008, the scientific committee gave advice on 130 new research proposals. The majority of these research proposals met EMGO’s methodological standards. In most cases, the committee’s advice consisted of minor suggestions for improving the grant application. Only after approval of the directorate will a project be labeled within the institute and can affiliated personnel be allocated.

Furthermore, the scientific committee provided prompted as well as non-prompted advice to the management team on matters concerning research. The scientific committee has additionally contributed to the organization of the annual retreat and was responsible for the selection of the EMGO science and societal impact award.

six
Quality Committee
The quality committee consists of a representation of various professions, programs and departments of the institute. In 2008 the members were: Caroline Terwee (chair), Michel Paardekooper (quality functionary), Joost Dekker, Marleen van der Horst, Hein van Hout (co-chiar), Wim Kraan, Roeliene Pasman, Esther van ‘t Riet, and Annemieke van Straten.

The quality committee is responsible for developing, implementing and maintaining a quality system which aims at supporting and improving the research process in the institute. Moreover, the quality committee advises the directorate on quality issues. To fulfill its tasks the quality committee audits research projects, maintains and expands a web-based quality manual, gives personal instructions for all newly appointed researchers within the institute, and organizes introduction courses on quality issues. In 2008 the quality committee has audited 15 research projects in 2008 and the committee has also organized one ‘theme-audit’ concerning supervising. The quality functionary has given 36 personal instructions for newly appointed investigators. In 2008 two guidelines have been developed: on prediction models and on transfer of study archives after researchers leave the institute.
Furthermore, 3 new practical guidelines have been developed; a guideline on handling data across different workstations and offices and a guideline on calamities. The third guideline is a checklist on the outline of costs.

PhD Committee
The PhD committee consists of two senior investigators and one PhD student. In 2008 Raymond Ostelo (Chair) and Mai Chin a Paw represented the senior staff, while Jeroen Lakerveld represented the PhD students. The PhD committee is responsible for reviewing the process of PhD students, especially with regard to education. They not only review the ‘education and supervision agreement’ signed at the beginning of the project, but they also review the evaluations conducted by the supervisor after ten months and then again after three years. Another task of the committee is to advise the directorate on matters concerning education, supervision and assessment of PhD students.
External Advisory Committee
An external advisory board advises the management team of EMGO on policy plans, evaluations, and other relevant research issues. Members of this external advisory committee in 2008 were: Prof. J. van der Meer, MD, PhD (chair – Former Professor of Internal Medicine), Prof. M.G. Boekholdt, MD, PhD (Former Director of Vereniging Het Zonnehuis), Prof. A. Knottnerus, MD, PhD (Chair of the Netherlands Health Council), M.J. van Til, MD (VUmc – Head of the Occupational Health Service of VU/VUmc), Prof. W. van Tilburg, MD, PhD (Former head of department Psychiatry, VUmc), Prof. S.P. Verloove-Vanhorick, MD, PhD (Former head of department of Youth Health Care, TNO Quality of Life), Prof. P.C. Huijgens, MD, PhD (Director CCA/V-ICI, VUmc).

Meeting with the External Advisory Committee
METHODOLOGICAL EXPERTISE

The EMGO Institute has a strong focus on methodological issues. This especially concerns the topics of clinimetrics (Riekie de Vet, Caroline Terwee, Raymond Ostelo, Dirk Knol), Health Technology Assessment (HTA) (Maurits van Tulder, Raymond Ostelo), prognosis and prediction research (Daniëlle van der Windt, Martijn Heymans, Riekie de Vet) and longitudinal data analysis (Jos Twisk, Martijn Heymans).

Clinimetrics
Clinimetrics concerns the quality of measurements in medical and health science research as well as in clinical practice. Much attention is paid to patient reported outcomes. At the EMGO Institute the clinimetrics group focuses on the detection of minimal important changes on patient reported outcomes, and on the application of item response theory methods to improve measurement instruments. Recently, consensus-based standards for selection of health status measurement instruments have been established in the COSMIN study. This forms part of the development of methods to perform systematic reviews to evaluate measurement properties of measurement instruments with the aim to choose the best instrument in a specific field. The clinimetrics group consists of approximately 15 researchers from different research programs and departments which facilitates the application of clinimetric methods throughout the EMGO Institute.

Health Technology Assessment (HTA)
HTA examines the consequences of the application of health interventions, not only in terms of effectiveness but also in terms of costs, ethics and legality. At EMGO, economic evaluations are conducted alongside randomized controlled trials of diagnostic, preventive and therapeutic interventions. HTA researchers at EMGO also perform systematic reviews on effectiveness of interventions (within the framework of the Cochrane Collaboration), develop evidence-based guidelines, and evaluate the implementation of those guidelines. Consultations and support is offered throughout EMGO and VUmc.

Prognosis and prediction
Prognostic studies aim to distinguish between patients with a favorable and poor outcome. Prognosis studies examine the strength of association with one or a few factors which are causally related to the outcome, or aim to develop prediction models based on multiple factors which give the best prediction of patient outcomes. The results of these studies are important to inform the patients about the probable course of their disease, to make adequate treatment decisions, or to plan health care facilities. Furthermore, evidence for causal prognostic factors may trigger the development of new interventions. The prognosis group of EMGO examines which methods are most adequate to design and analyze prognostic factors and prediction studies. Recently, guidelines have been produced for EMGO researchers for the optimal performance of prognosis and prediction studies.
LONGITUDINAL STUDIES
The EMGO Institute manages four major large-scale longitudinal studies that form an important basis for much of our research. The Amsterdam Growth and Health Longitudinal Study (AGGO, www.emgo.nl/research_infra/amsterdam/index.asp) was initiated in 1974, to monitor the growth, health, and lifestyle of 600 boys and girls entering secondary school over a period of four years. After the original four years, the follow-up was extended to take measurements when the participants were 21-, 27-, 29-, 32-, and 36 years old. In 2006, almost 350 41-year-old participants attended the tenth repeated measurement, so that almost 30-year follow-up data are now available.

The Hoorn Study (Hoorn Study, www.emgo.nl/research_infra/hoorn/index.asp) was initiated in 1989 to study the prevalence and determinants of type 2 diabetes in the general population in the Netherlands. The Hoorn Study cohort has been monitored ever since and has been extended to include additional study populations. Furthermore, in 1996, to support diabetes care in the study region, the Diabetes Care System West-Friesland was initiated and a diabetes research centre was built.

The Netherlands Study of Depression and Anxiety (NESDA, www.nesda.nl) is a ten-year longitudinal investigation into the course of depression and anxiety disorders, and was started in 2003. The fourth major cohort study within the EMGO institute is the Longitudinal Aging Study Amsterdam (LASA, www.lasa-vu.nl). The LASA-team, under professor Dorly Deeg’s leadership, ensured extensive additional funding for this study in 2008, enabling a new wave of data collection. The LASA study is therefore highlighted in this year’s annual report.

One example:
The Longitudinal Aging Study Amsterdam (LASA)
LASA is an interdisciplinary study on changes in physical, emotional, cognitive, and social functioning; interrelations between these domains of functioning; and potential determinants and consequences of changes in functioning. Its main goal is to supply insights that enhance the autonomy, quality of life, and social integration of older persons. Since the start of the study, data collection cycles each three years have been funded by the Netherlands Ministry of Health, Welfare and Sports. The design includes an age- and sex-stratified random sample of 3,107 participants aged 55-85 in 1992-1993, and a similar sample aged 55-64 added in 2002. In 2005-2006 both samples were merged for the most recent data collection cycle.
Objectives
LASA was designed as an interdisciplinary, longitudinal study to provide a basis for developing and evaluating social policies at the local and national levels, policies that enhance older persons autonomy, social integration, and quality of life. LASA is primarily an observational study and its database can be used to test various specific hypotheses. The central research questions are: What changes take place over time in the physical, emotional and social components of functioning? What are the predictors of these changes? How are these changes interrelated to each other? What are the consequences of changes in terms of contribution of the older person to society, their adjustment to aging, and their need for care.

Dorly Deeg, scientific director LASA
International collaboration
National collaboration exists with more than 20 different groups and departments in other universities and in non-university institutes in the Netherlands, in particular with the Netherlands Institute of Public Health and the Environment, the Social and Cultural Planning Office, and the Trimbos Institute for Mental Health and Addiction. International collaboration exists in the first place in the context of European programs, such as the European Concerted Action on Depression in the Elderly (EURODEP), the Comparison of Longitudinal European Studies of Ageing (CLESA) and the Family Support network (FAMSUP). In addition, bilateral collaboration with more than 10 different European academic groups and departments exists and this number will be increasing when major grant proposals that are now being evaluated will be funded. In the U.S.A., with the National Institute on Aging and several university-based groups, a long-standing collaboration exists. Thus, the LASA study is and will increasingly be an important data source for a wide variety of studies with input from a great number of international experts on ageing and related scientific areas.

RESEARCH CENTERS AND ACADEMIC WORKPLACES
The ambition of the EMGO Institute is to conduct research that has immediate bearing on the daily practice of extramural health care. In order to facilitate this ambition EMGO has established over the years a number of Research Centers and Academic Workplaces. The Research Centers cover specific topics of dedicated research and service to the public, whereas the Academic Workplaces provide direct links with everyday practice. In Academic Workplaces research, teaching, as well as direct care all come together. Each Research Center and Academic Workplace is formalized by an agreement with a stakeholder outside VUmc. Research Centers and Academic Workplaces that were active in 2008 are all described on EMGO’s website (www.emgo.nl).

One example:
Academic Workplace Child and Youth Health Care North-Holland
In 2003 the Academic Workplace Child and Youth Health Care (AWC-YHC) was started. It concerns a collaboration between the Department of Public and Occupational Health of VUmc, three Municipal Public Health Services and two Centers for Infant and Child Health Care. The main purpose is to improve knowledge transfer between the AWC-CYHC, health policy, research and education. Themes addressed are overweight, parenting support, child abuse and neglect, and psychosocial problems. The AWC-CYHC develops scientific and feasible products, based on research questions relevant for the AWC-CYHC organizations after deliberation with the local coordinators and managers. In order to operate effectively there is a number of personnel with dual appointments in both VUmc and one of the participating partner institutes.
Since 1989 the department of Epidemiology & Biostatistics and the EMGO Institute organize a Postgraduate Epidemiology Program. This program includes a full Master program in epidemiology and offers additional courses in epidemiological methods. The Master program in epidemiology trains postgraduates from a range of disciplines (Medicine, Health Sciences, Biomedical Sciences, Pharmaceutical Sciences etc.). It focuses on applied research in primary care and public health. The program provides methodological tools for evidence-based medicine, public and occupational health and health policy. The theoretical section of this Master program consists of six compulsory courses and one optional course. The program also includes a scientific internship, which spans a period of six months. The participating students are researchers (including PhD students) and professionals working in the health services fields.

In 2008, 25 students successfully completed the Master program in Epidemiology. The Master program in epidemiology meets the Netherlands Epidemiological Society's registration requirements for epidemiologists. The program has also been registered by the Executive Board of VU University Amsterdam as an official Master program. In 2008 a start has been made on revising the curriculum, which will be implemented in 2010.

More information on the program and the courses can be found via our website www.emgo.nl or at www.epidemiologievumc.nl/.
Table 16: Acquisition of grants per year, 2004-2008 (in euro's)

<table>
<thead>
<tr>
<th>year</th>
<th>Direct Funding (DF)</th>
<th>Research Funding (RF)</th>
<th>Contract Funding (CF)</th>
<th>Business Funding (BF)</th>
<th>RF+CF+BF</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>4,953,521</td>
<td>1,552,021</td>
<td>6,130,811</td>
<td>850,736</td>
<td>8,533,568</td>
</tr>
<tr>
<td>2005</td>
<td>7,014,123</td>
<td>4,722,859</td>
<td>1,956,553</td>
<td>4,537,675</td>
<td>11,217,087</td>
</tr>
<tr>
<td>2006</td>
<td>6,464,743</td>
<td>2,445,581</td>
<td>4,766,891</td>
<td>40,975</td>
<td>7,273,447</td>
</tr>
<tr>
<td>2007</td>
<td>6,785,073</td>
<td>4,134,805</td>
<td>6,816,592</td>
<td>378,183</td>
<td>11,329,580</td>
</tr>
<tr>
<td>2008</td>
<td>7,256,214</td>
<td>3,564,580</td>
<td>8,593,411</td>
<td>404,109</td>
<td>12,562,100</td>
</tr>
</tbody>
</table>

Direct funding  Is university funding.  The calculation of direct funding will be further explained in note 1 below table 2.

Research Funding  Are funds allocated by the Netherlands Organization for Scientific Research, European Union, and the Netherlands Organization for Health Research and Development.

Contract Funding  Are funds allocated by the so-called money-box funds (Dutch Heart Foundation, Dutch Diabetes Research Funds, Dutch Cancer Society, etc.) as well as allocated grants directly from the government and government grants allocated through 'College voor Zorgverzekeringen'.

Business Funding  Grants allocated by businesses, the pharmaceutical industries in particular and other additional smaller funds without a peer review procedure.
Table 17: Expenditure per year, 2004-2008 (in euro's)

<table>
<thead>
<tr>
<th>year</th>
<th>Direct Funding¹</th>
<th>Research Funding²</th>
<th>Contract Funding²</th>
<th>Business Funding²</th>
<th>RF+CF+BF²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(DF)</td>
<td>(RF)</td>
<td>(CF)</td>
<td>(BF)</td>
<td></td>
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<td>2004</td>
<td>5,312,122</td>
<td>2,441,030</td>
<td>4,126,050</td>
<td>331,833</td>
<td>6,898,913</td>
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<tr>
<td>2005</td>
<td>7,412,542</td>
<td>2,561,236</td>
<td>2,486,097</td>
<td>1,562,102</td>
<td>6,609,435</td>
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<tr>
<td>2006</td>
<td>6,713,999</td>
<td>3,959,960</td>
<td>4,658,834</td>
<td>889,213</td>
<td>9,508,007</td>
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<tr>
<td>2007</td>
<td>6,605,999</td>
<td>3,869,214</td>
<td>4,081,674</td>
<td>1,153,976</td>
<td>9,104,864</td>
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<tr>
<td>2008</td>
<td>6,752,342</td>
<td>3,657,226</td>
<td>4,290,030</td>
<td>1,110,023</td>
<td>9,057,279</td>
</tr>
</tbody>
</table>

¹ Concerns the annual available budgets allocated by VUmc. Costs of direct funded personnel of the EMGO department are included as well as the direct funded formation from other departments. To convert formation into money, we used

1 FTE Scientific Staff = € 94.005 (in 2007 € 90.009, 2006 € 90.666, 2005 € 89.443 and 2004 € 87.600)

² Concerns expenses for the Institute’s research projects in the year 2008, including costs of personnel and expenses for the postgraduate epidemiology program

Figure 2: Expenditure per type of funding per year, 2004-2008
Preconceptional carrier couple screening for cystic fibrosis and hemoglobinopathies
An ancestry-based offer in a multi-ethnic society
Phyllis Lekseman

Risk factors for arm-wrist-hand and neck-shoulder symptoms among office workers
A longitudinal perspective
Stefan IJmker

INSULIN; SENSE AND SENSITIVITY
INSULIN SECRETION AND INSULIN SENSITIVITY IN RELATION TO TYPE 2 DIABETES AND CARDIOVASCULAR DISEASE
Weite Boersma

Psychological consequences of prenatal screening
J H Kleinveld
Lifestyle. Overweight and Diabetes

1. Boorsma W. "Insulin: sense and sensitivity": insulin secretion and insulin sensitivity in relation to type 2 diabetes and cardiovascular disease; ( VU University Medical Center; Promotor: Ms. Prof. J.M. Dekker, PhD, Prof. R.J. Heine, MD, PhD; Co-promotor: Prof. G. Nijpels, MD, PhD). (A).

2. de Wit M. Monitoring and discussing health-related quality of life in adolescents with type 1 diabetes in routine practice. (VU University; Promotor: Prof. F.J. Snoek, PhD; Prof. Ms. H.A. Delemarre-van de Waal, PhD; Co-promotor: Prof. R.J.B.J. Gemke, PhD). (A).

3. Kroeze W. Insights in the efficacy of computer-tailored nutrition education. (Erasmus University Rotterdam; Promotor: Prof. J. Brug, PhD; M. Campbell, PhD; Co-promotor: Ms. A. Oenema, PhD). (D).

4. Singh AS. Effectiveness of a school-based weight gain prevention programme: DOI. (VU University Medical Center; Promotor: Prof. W. van Mechelen, MD, PhD, Prof. J. Brug, PhD; Co-promotor: Ms. M.J.M. Chin A Paw, PhD). (A).

5. Stiggelbout M. More exercise for seniors: opportunities and challenges. (VU University Medical Center; Promotor: Prof. W. van Mechelen, MD, PhD; Co-promotor: Ms. Prof. M. Hopman-Rock, PhD; M. de Greef, PhD). (B).

6. Welschen LMC. Disease management for patients with type 2 diabetes: towards patient empowerment. (VU University Medical Center; Promotor: Prof. G. Nijpels, MD, PhD, Ms. Prof. J.M. Dekker, PhD; Co-promotor: Ms. P.C. van Oppen, PhD). (A).

7. Wiemer NGM. The influence of diabetes mellitus on the refractive properties of the human eye. (VU University Medical Center; Promotor: Prof. dr. B.C.P. Polak; Prof. dr. P.J. Ringens; Co-promotor: Dr. M. Dubbelman). (A).

Mental Health

1. Assink MHJ. Autobiographical memory in longitudinal perspective. Stability and change of reported life events over a five-year period. (VU University; Promotor: Prof. P.J.D. Drenth, PhD; Co-promotor: J.J.F. Schroots, PhD). (A).

2. Bierman EJM. Depression, anxiety and cognition in later life. (VU University Medical Center; Promotor: Prof. A.T.F. Beekman, MD, PhD; Prof. C. Jonker, MD, PhD; Co-promotor: Ms. H.C. Comijs, PhD). (A).

3. Bremmer MA. Late life depression and cardiac diseases: biological underpinnings in a population-based sample. (VU University Medical Center; Promotor: Prof. W.G.J. Hoogendijk, MD, PhD; Prof. A.T.F. Beekman, MD, PhD; Ms. Prof. D.J.H. Deeg, PhD). (A).

4. Buizer AI. Neurocognitive function after childhood cancer: effects of chemotherapy. (VU University Medical Center; Promotor: Prof. A.J.P. Veerman, PhD, L.M.J. de Sonneville, PhD). (A).

5. Hamerlynck SMJJ. Girls in Juvenile Justice Institutions. Psychopathology and Sexual Risk Behavior; Promotor. (VU University Medical Center; Prof. Th.A.H. Doreleijers, MD, PhD; Ms. Prof. P.T. Cohen-Kettenis, PhD; Co-promotor: Prof. R.R.J.M. Vermeiren, MD, PhD; Ms. L.M.C. Nauta-Janse, PhD). (A).

6. Licht-Strunk E. The prognosis of late-life depression in general practice. (VU University Medical Center; Promotor: Prof. M. de Haan, MD, PhD, Prof. A.T.F. Beekman, MD, PhD, H.W.J. van Marwijk, MD, PhD). (A).
7. Onrust SA. Intervening after the loss of a spouse: is it (cost-) effective and for whom? (VU University Medical Center; Promotor: Prof. P. Cuijpers, PhD; Prof. J. van den Bout, PhD; Co-promotor: Dr. F. Smit). (B).

8. Riper H. Curbing problem drinking in the digital galaxy. (VU University; Promotor: Prof. dr. W.J.M.J. Cuijpers; Prof. dr. G.M. Schippers; Co-promotor: Dr. F. Smit; Dr. J. Kramer). (B).

9. van Grootheest DS. The genetic and environmental architecture of obsessive-compulsive symptoms. (VU University Medical Center; Promotor: Ms. Prof. D.I. Boomsma, PhD; Prof. A.T.F. Beekman, MD, PhD). (A).

10. Van HL. Exploring predictive factors in depression treatment. The role of patient characteristics and psychodynamic diagnosis. (VU University; Promotor: Prof. J.J.M. Dekker, PhD; Co-promotor: R.A. Schoevers, PhD). (B).

Quality of Care

1. Beirens TMJ. Home-related injury prevention and safety promotion in the setting of preventive Youth Health Care. (Erasmus University Rotterdam; Promotor: Prof. J. Brug, PhD.; Co-promotor: H. Raat, MD, PhD). (D).

2. Hooning MJ. Adverse effects of treatment in long-term survivors of breast cancer. (VU University Medical Center; Promotor: Ms. Prof. F.E. van Leeuwen, PhD). (A).

3. Kleinveld JH. Psychological consequences of prenatal screening. (VU University Medical Center; Promotor: Prof. G. van der Wal, MD, PhD; Prof. L.P. ten Kate, MD, PhD; Ms. Prof. D.R.M. Timmermans, PhD). (A).

4. Lakeman P. Preconceptional carrier couple screening for cystic fibrosis and hemoglobinopathies: an ancestry-based offer in a multi-ethnic society. (VU University Medical Center; Promotor: Prof. L.P. ten Kate, MD, PhD; Ms. Prof. M.C. Cornel, MD, PhD). (A).

5. Lunshof JE. The new genomics: challenges for ethics. (VU University Medical Center; Promotor: Ms. Prof. M.C. Cornel, MD, PhD; Prof. R. Chadwick, PhD, Prof. T. Pieters, PhD; Co-promotor: C.E. van El, PhD). (A).

6. van den Block L. End-of-life care and medical decision-making in the last phase of life. A study via the Sentinel Network of GPs. (Free University Brussels; Promotor: Prof. L. Deliens, PhD, Co-promotor: R. de Schepper, PhD). (D).

7. van Houten P. The relation between incontinence, toileting skills and morbidity in nursing homes. (VU University Medical Center; Promotor: Prof. dr. M.W. Ribbe; Co-promotor: Dr. W.P. Achterberg; Dr M.G. Dik). (A).

8. Vrieling A. The insulin-like growth factor (IGF) system in breast and colorectal carcinogenesis: dietary intervention and molecular studies. (VU University Medical Center; Promotor: Ms. Prof. F.E. van Leeuwen). (A).

9. Zekveld AA. Textual support to improve the comprehension of speech in adverse listening conditions. (VU University Medical Center; Promotor: Prof. T. Houtgast, PhD; Co-promotor: S.E. Kramer, PhD). (A).
### Musculoskeletal Health

1. **Buist I.** The GronoRun study. Incidence, risk factors, and prevention of injuries in novice and recreational runners. (University Medical Center Groningen; Promotor: Prof. R.L. Diercks, MD, PhD; Prof. W. van Mechelen, MD, PhD). (D).

2. **Graff MJL.** Effectiveness and efficiency of community based occupational therapy for older people with dementia and their caregivers. (University Medical Center St Radboud; Promotor: Ms. Prof. M.G.M. Olde-Rikkert, PhD, Prof. J. Dekker, PhD, Ms. Prof. M.J.M. Vernooij-Dassen, PhD). (D).

3. **Hamberg-van Reenen HM.** Physical capacity and work-related musculoskeletal symptoms. (VU University Medical Center; Promotor: Prof. W. van Mechelen, MD, PhD, Ms. Prof. P.M. Bongers, PhD, Co-promotor: Prof. A.J. van der Beek, PhD, Ms. B.M. Blatter, PhD). (A).

4. **Huysmans MMA.** From precision demands to neck and upper extremity pain. (VU University Medical Center; Promotor: Prof. J.H. van Dieën, PhD, Prof. A.J. van der Beek, PhD, Prof. M.P. de Looze, PhD, M.J.M. Hoozemans, PhD). (A).

5. **IJmker S.** Risk factors for arm-wrist-hand and neck-shoulder symptoms among office workers: a longitudinal perspective. (VU University Medical Center; Promotor: Ms. Prof. P.M. Bongers, PhD, Prof. W. van Mechelen, MD, PhD; Co-promotor: Prof. A.J. van der Beek, PhD, B.M. Blatter, PhD). (A).

6. **Rubinstein SM.** Adverse events following chiropractic care for subjects with neck pain. (VU University Medical Center; Promotor: Prof. M.W. van Tulder, PhD; Co-promotor: D.L. Knol, PhD). (A).

7. **van der Schie PEM.** Measuring motor outcome in childhood: prognosis and evaluation. (VU University Medical Center; Promotor: Prof. J. Becher, PhD; Co-promotor: Ms. A. Dallmeijer, PhD). (A).

8. **Shea BJ.** Assessing the methodological quality of systematic reviews: the development of AMSTAR. (VU University Medical Center; Promotor: Prof. L.M. Bouter, PhD, Prof. M. Broers, MD, PhD, Prof. J. Grimshaw, PhD). (A).

9. **Swinkels ICS.** Monitoring physiotherapy using a national registration network. (VU University Medical Center; Promotor: Prof. dr. J. Dekker; Prof. dr. W.J.H.M. van den Bosch; Co-promotor: Prof. dr. D.H. Bakker; Dr. C.H.M. van den Ende). (B).

10. **van der Esch M.** Knee joint stability and functional ability in patients with osteoarthritis of the knee. (VU University Medical Center; Promotor: Prof. dr. J. Dekker; Co-promotor: Dr. M.P.M. Steultjens). (B).

**A** = dissertation at EMGO Institute, prepared at EMGO Institute  
**B** = dissertation at EMGO Institute, prepared externally with an EMGO senior advisor  
**C** = external dissertation, prepared at EMGO Institute  
**D** = external dissertation, prepared externally
Screening malnutrition in hospital outpatients. Can the SNAQ malnutrition screening tool also be applied to this population?

F. Neelmea a,⁎, H.M. Kruizenga a, H.C.W. de Vet b, J.C. Seiddell a, M. Butterman d, M.A.E. van Bokhorst-de van der Schueren a

a Department of Nutrition and Dietetics, VU University medical centre, P.O. Box 7077, 1007 MS Amsterdam, The Netherlands

b EMGO Institute, VU University Medical Centre, Amsterdam, The Netherlands
c Institute for Health Sciences, Department of Nutrition and Health, VU University Amsterdam, The Netherlands
d Department of Surgery, Anaesthesiology and Perioperative Screening, VU University Medical Centre, Amsterdam, The Netherlands

Received 21 October 2007; accepted 4 February 2008

Keywords
Malnutrition; Screening; Nutritional status;
Diagnosis; SNAQ

Summary
Background & aims: It is known from earlier studies that only 15% of the malnourished hospital outpatient population is recognized and receives nutritional treatment. To increase this number, a quick and easy malnutrition screening tool should be developed. Because such a tool is lacking, we developed a new screening tool using the SNAQ (short Nutritional Assessment Questionnaire) as a basis.

Methods: First, an optimal set of questions was selected for the outpatient malnutrition screening tool. Secondly, the diagnostic accuracy for the proposed outpatient screening tool was assessed in 308 patients.

Results: The three original SNAQ questions proved to be the best set of questions for the outpatient population as well. In the prospective and general outpatient population the diagnostic accuracy respectively was a sensitivity of 53% and 66%, a specificity of 86% and 94%, a positive predictive value of 68% and 72% and a negative predictive value of 94% and 97%.

⁎ Corresponding author. Tel.: +31 20 5587323; fax: +31 20 5584841.
E-mail address: F.Neelmea@med.vu.nl (F. Neelmea).

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Table 18: Dissertations and indexed scientific publications, 2004-2008 (in relation to scientific staff formation)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total scientific staff</th>
<th>Dissertations</th>
<th>International scientific publications</th>
<th>National scientific publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>118,3</td>
<td>27</td>
<td>321</td>
<td>68</td>
</tr>
<tr>
<td>2005</td>
<td>149,4</td>
<td>26</td>
<td>428</td>
<td>102</td>
</tr>
<tr>
<td>2006</td>
<td>165,7</td>
<td>45</td>
<td>457</td>
<td>104</td>
</tr>
<tr>
<td>2007</td>
<td>162,4</td>
<td>29</td>
<td>415</td>
<td>66</td>
</tr>
<tr>
<td>2008</td>
<td>181,0</td>
<td>36</td>
<td>446</td>
<td>78</td>
</tr>
</tbody>
</table>

\[1\] Concerns all scientific staff formation

Figure 3: Dissertations and publications in relation to total scientific staff formation
Table 19: Dissertations and publications, 2004-2008 per 10 FTE direct funded scientific staff excluding PhD students

<table>
<thead>
<tr>
<th>Year</th>
<th>DF scientific staff¹</th>
<th>Dissertations</th>
<th>Scientific publications international</th>
<th>Scientific publications national</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>33,4</td>
<td>8,1</td>
<td>96,1</td>
<td>20,3</td>
</tr>
<tr>
<td>2005</td>
<td>40,9</td>
<td>6,4</td>
<td>104,7</td>
<td>25,0</td>
</tr>
<tr>
<td>2006</td>
<td>38,5</td>
<td>11,7</td>
<td>118,8</td>
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<tr>
<td>2007</td>
<td>43,9</td>
<td>6,6</td>
<td>94,6</td>
<td>15,0</td>
</tr>
<tr>
<td>2008</td>
<td>49,1</td>
<td>7,3</td>
<td>90,9</td>
<td>15,9</td>
</tr>
</tbody>
</table>

¹ Concerns the realised appointments with direct funded research formation and the additional research formation from VUmc departments participating in EMGO

Figure 4: Dissertations and publications, 2004-2008 per 10 FTE direct funded scientific staff excluding PhD students
LIFESTYLE, OVERWEIGHT AND DIABETES

International scientific publications


<table>
<thead>
<tr>
<th>Number</th>
<th>Author(s)</th>
<th>Title</th>
<th>Journal</th>
<th>Volume</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>de Wit M, Delemarre-van de Waal HA, Bokma JA, Haasnoot K, Houdijk MC, Gemke RJ, Snoek FJ</td>
<td>Monitoring and discussing health-related quality of life in adolescents with type 1 diabetes improve psychosocial well-being: a randomized controlled trial</td>
<td>Diabetes Care</td>
<td>31</td>
<td>1521-6</td>
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<tr>
<td>27.</td>
<td>Dekkers JC, van Wier MF, Hendriksen JMJ, Twisk JWR, van Mechelen W</td>
<td>Accuracy of self-reported body weight, height and waist circumference in a Dutch overweight working population</td>
<td>BMC Medical Research Methodology</td>
<td>8</td>
<td>69</td>
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<tr>
<td>32.</td>
<td>Gao W, DECODE study group</td>
<td>Does the constellation of risk factors with and without abdominal adiposity associate with different cardiovascular risk—the LASA study</td>
<td>Obesity (Silver Spring)</td>
<td>16</td>
<td>2510-7</td>
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<tr>
<td>35.</td>
<td>Heim N, Snijder MB, Deeg DJH, Seidel JC, Visser M</td>
<td>Obesity in older adults is associated with an increased prevalence and incidence of pain</td>
<td>Obesity (Silver Spring)</td>
<td>2008</td>
<td>16(11): 2510-7</td>
</tr>
</tbody>
</table>


Cochrane reviews and protocols


Letters to the editor


National scientific publications


ten

PUBLICATIONS

Books and proceedings


Other publications


5. Tak NI, te Velde SJ, Brug J. Are positive changes in potential determinants associated with increased fruit and vegetable intakes among primary schoolchildren? Results from two intervention studies in the Netherlands: the Schoolgruiten Project and the Pro Children study. The IFAVA Scientific Newsletter 2008; 26(2).


Reports

Abstracts


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**International scientific publications**


68. Pot AM, Melenhorst AS, Onrust SA, Bohlmeijer ET. (Cost)effectiveness of life review for older adults: design of a randomized controlled trial. BMC Public Health 2008; 8: 211.


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1. van der Meer RM, Willemse MC, Smit F, Cuijpers P. Smoking cessation interventions for smokers with current or past depression (Protocol). Cochrane Database of Systematic Reviews 2008; 3(CD006102).


Letters to the editor

National scientific publications


Books and proceedings


PUBLICATIONS


Other publications


7. van Balkom AJLM. Vergroten van het effect van psychotherapie bij angststoornissen met behulp van medicatie. Psychiatrie Actueel 2008; 8(1).


Reports


Abstracts


QUALITY OF CARE

International scientific publications


25. Duckers MLA, Wagner C, Groenewegen PP. Developing and testing an instrument to measure the presence of conditions for successful implementation of quality improvement collaboratives. BMC Health Services Research 2008; 8: 172.


Cochrane reviews and protocols

Letters to the editor


National scientific publications


Books and proceedings


Other publications


Reports


3. de Roode RP. Juridische aspecten van perinatale audit. 2008. Utrecht, KNMG/RIVM.


Abstracts


19. van Rens GHMB, van Nispen RMA, Hoeijmakers JCJ, de Boer MR. Self-reported comorbidity is inaccurately reported by visual impaired adults. Investigation Ophthalmology and Visual Science 2008; 49.


International scientific publications


<table>
<thead>
<tr>
<th>Publication Number</th>
<th>Authors</th>
<th>Title</th>
<th>Journal</th>
<th>Volume</th>
<th>Pages</th>
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</thead>
<tbody>
<tr>
<td>83.</td>
<td>Stiggelbout M, Hopman-Rock M, van Mechelen W.</td>
<td>Entry correlates and motivations of older adults participating in organized exercise programs.</td>
<td>Journal of Aging and Physical Activity</td>
<td>16(3)</td>
<td>342-54</td>
</tr>
<tr>
<td>84.</td>
<td>Stolwijk-Swüste JM, Beelen A, Lankhorst GJ, Nollet F.</td>
<td>SF36 physical functioning scale and 2-minute walk test advocated as core qualifiers to evaluate physical functioning in patients with late-onset sequelae of poliomyelitis.</td>
<td>Journal of Rehabilitation Medicine</td>
<td>40(5)</td>
<td>387-94</td>
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<td>86.</td>
<td>Swinkels ICS, Hart DL, Deutscher D, van den Bosch WJHM, Dekker J, de Bakker DH, van den Ende CHM.</td>
<td>Comparing patient characteristics and treatment processes in patients receiving physical therapy in the United States, Israel and the Netherlands.</td>
<td>BMC Health Services Research</td>
<td>8(1)</td>
<td>163</td>
</tr>
<tr>
<td>87.</td>
<td>Szadek KM, Hoogland PV, Zuurmond WWA, de Lange JJ, Perez RSGM.</td>
<td>Nociceptive nerve fibers in the sacroiliac joint in humans.</td>
<td>Regional Anesthesia and Pain Medicine</td>
<td>33(1)</td>
<td>36-43</td>
</tr>
<tr>
<td>91.</td>
<td>van de Weg FB, van der Windt DAWM, Vahl AC.</td>
<td>Wound healing: total contact cast vs. custom-made temporary footwear for patients with diabetic foot ulceration.</td>
<td>Prosthetics and Orthotics International</td>
<td>32(1)</td>
<td>3-11</td>
</tr>
<tr>
<td>96.</td>
<td>van der Meer IM, Boeke AJP, Lips P, Grootjans-Geerts I, Wuister JD, Devillé WLJM, Wielders JPM, Bouter LM, Middelkoop BJC.</td>
<td>Fatty fish and supplements are the greatest modifiable contributors to the serum 25-hydroxyvitamin D concentration in a multiethnic population.</td>
<td>Clinical Endocrinology</td>
<td>68(3)</td>
<td>466-72</td>
</tr>
<tr>
<td>100.</td>
<td>van der Wees PJ, Jantvedt G, Rebbeck T, de Bie RA, Dekker J, Hendriks EJM.</td>
<td>Multifaceted strategies may increase implementation of physiotherapy clinical guidelines: a systematic review.</td>
<td>Australian Journal of Physiotherapy</td>
<td>54(4)</td>
<td>233-41</td>
</tr>
<tr>
<td>102.</td>
<td>van der Windt DAWM, Dunn KM, Spies-Dorgelo MN, Mallen CD, Blankenstein AH, Stalman WAB.</td>
<td>Impact of physical symptoms on perceived health in the community.</td>
<td>Journal of Psychosomatic Research</td>
<td>64(3)</td>
<td>265-74</td>
</tr>
</tbody>
</table>


Cochrane reviews and protocols


Letters to the editor


National scientific publications


Books and proceedings


Other publications


4. van der Beek AJ, Kuijer PPFM. Hef tiltcursussen op en doe wat wel werkt! Tijdschrift voor Ergonomie 2008; 33: 38.


Reports

Abstracts


