SUMMARY

Magic mirror on the wall, who is most inactive of them all?
Untangling determinants of a long-term inactive lifestyle in young adults

Nowadays, a considerable part of the world population is insufficiently physically active and sits for long hours. Researchers predict that the number of people that is insufficiently physically active and that spends a large amount of their time engaging in sedentary behaviours will further increase within the next few years. This trend is worrying, because insufficient physical activity as well as sedentary behaviour is for instance associated with a higher risk of developing heart disease, diabetes and different types of cancer.

To prevent the occurrence of these adverse health effects, programs that focus on increasing one’s time spent in physical activity and on limiting one’s time spent in sedentary behaviour are being developed all over the world. It is important to assess which people are less physically active and/or more sedentary in order for such programs to be targeted to the right at-risk group. By means of analysing existing data of young adults, this thesis adds to a better understanding of the association between person-related factors and physical activity on the one hand, and sedentary behaviour on the other hand. In scientific research, these person-related factors are also referred to as person-related determinants.

The person-related determinants that are central to the research in this thesis include socio-demographic factors such as ethnicity, education and marital status, work-related factors like occupation and number of work hours, physical factors like body composition and fitness, but also daily hassles and life events such as going through a divorce or having conflicts with colleagues. Two additional categories of person-related determinants that are investigated comprise personality and lifestyle (for example smoking and alcohol consumption). Because different types of physical activity and sedentary behaviour exist, this thesis sought to identify determinants of daily physical activity, moderate intensity and vigorous intensity physical activity, leisure time physical activity, TV viewing, computer use, total screen time (the sum of TV viewing and computer use) and daily sitting, respectively.

Results
Our results showed that daily hassles and live events were not associated with sedentary behaviour and only to a small extent with physical activity, namely: i) the more daily hassles young adults experienced, and ii) the higher they appraised work and finances-related life events the more physically active they were (Chapter 3). In Chapter 4 the determinants of different types of physical activity were compared, as well as the differences in determinants between men and women. This study showed that determinants of vigorous intensity physical activity were not the same as determinants of moderate intensity physical activity, and that determinants of physical activity were different for men and women. The combined results of Chapter 4 and 5 showed that young adults with decreased levels of physical health, who were married, had children and belonged to an ethnic minority, those with lower education or those who smoked were on average less physically active than their peers. Other person-related determinants that were associated with less physical activity were: living in an urban environment and experiencing more stress. On the contrary, young adults who consumed moderate amounts of alcohol were more physically active.

In Chapter 6, the determinants of different types of sedentary behaviour were compared and in Chapter 7 the differences in determinants between week-day sitting and weekend-day sitting were investigated. Determinants of TV viewing were not the same as determinants of computer use and determinants of week-day sitting and weekend-day sitting differed as well. The combined results of Chapter 6 and 7 showed that decreased levels of physical health and smoking were associated with more time spent in sedentary behaviour. Young adults who belonged to an ethnic minority were more sedentary on week-days and weekend-days, while those with a lower education were more sedentary than those with a higher education but on weekend-days only. Also, young professionals (for example manager or doctor) sat more than young adults without paid work, on both week- and weekend-days. Other person-related factors that were associated with more time spent sedentary were: gender (men sat more) and experiencing more stress. Young adults who were married or who had children were less sedentary than young adults who were not married or did not have children.

Our results show that engagement in less physical activity and more sedentary behaviour have some determinants in common. Decreased levels of physical health, lower socio-economic status, smoking and experiencing more stress were associated with less physical activity and more sedentary behaviour. Young adults who were married or who had children, were assessed to be less physically active than married adults and those without children, but our results also showed that they spent less time being sedentary.

Implications
The identification of behavioural determinants and specific at-risk groups is the first step in the development of effective strategies to realise behavioural change. Based on the results of this thesis, it can be concluded that young adults with decreased levels of physical health, lower socio-economic status, those who smoked and experienced more stress were on average less physically active and spent more time in sedentary behaviour.
Yet, except for describing a ‘high-risk profile’, from our result it can also be derived that:

1) determinants of physical activity are different for men and women (for example: only in men a higher score on dominance was associated with less physical activity; Chapter 4);
2) different types of physical activity have different determinants (for example: high caloric intake was associated with less vigorous physical activity, but not with less moderate physical activity; Chapter 4);
3) different types of sedentary behaviour have different determinants (for example: smoking was associated with more TV viewing, but not with more computer use; Chapter 6);
4) determinants are different for week-day and weekend-day sedentary behaviour (for example: young adults with a full-time job were more sedentary on week-days than young adults with a part-time job, but this was not true for week-end-days; Chapter 7).

Intervention developers who are concerned with designing health enhancing programs that promote physical activity and limit sedentary behaviour, should not only focus on at-risk groups, but also tailor their programs to the specific behaviour they want to change; for example moderate or vigorous intensity physical activity and TV viewing or computer use. Furthermore, not all people in need of a physical activity promoting program also need a sedentary behaviour reducing intervention and vice versa. Stimulating physical activity requires a different approach than decreasing sedentary behaviour.

Regarding program development, the current results show that among others there are opportunities for initiatives that consider young parents. Child health care centres could for example provide young parents with information on how to be physically active with their baby in and around the house, or on local physical activity initiatives such as walking or running behind the stroller with a group of young parents. Other areas that need attention are: reducing prolonged occupational sedentary behaviour or designing ‘physical activity friendly’ urban environments. Finally, we think it is meaningful to enhance our understanding about the underlying mechanisms (‘the why’) of insufficient physical activity and engaging in too much sedentary behaviour. Our data did not facilitate such research, but qualitative studies –for example through interviews- could increase our awareness and therefore we advise future research to conduct such studies more frequently.

Conclusion
Current society deals with a population that is increasingly becoming less physically active and that tends to be sedentary for long hours. To prevent the occurrence of adverse health effects that are associated with insufficient physical activity and sedentary behaviour, it is important to expand our knowledge on at-risk groups and significant determinants of both behaviours. This will eventually add to the development of more effective programs that target people who are most at risk of a physically inactive and sedentary lifestyle. Young adults who are at higher risk of being less physically active and more sedentary include those with decreased physical health, lower socio-economic status, those who smoke and experience more stress. When developing programs that focus on increasing physical activity and decreasing sedentary behaviour, intervention developers should bear in mind that: i) men and women, ii) different types of physical activity, and iii) different types of sedentary behaviour, have different person-related determinants. This thesis adds to the existing scientific knowledge of behavioural determinants among young adults.