Chapter 2

How Self-Affirmation Affects Health Message Derogation

The International Diabetes Federation estimates that about 380 million people worldwide will suffer from diabetes by the year 2025 (International Diabetes Federation, 2006). Type 2 diabetes is the most common type of diabetes and accounts for 90-95% of all diabetes. When left undiagnosed and untreated, people with this disease can develop serious health problems (e.g., kidney, eye, nerve, and cardiovascular diseases), which can result in a premature death (International Diabetes Federation, 2006). Used to be seen as most common in elderly, the number of people with diabetes will be largely increased due to an increasing prevalence of overweight and obesity among all age-groups (International Diabetes Federation, 2006). Thus, to date, more and more people are susceptible to this disease with its life-threatening complications. These developments point to the necessity of effective health promotion efforts.

Health promotion campaigns targeting type 2 diabetes aim to reach at-risk populations in order to make them aware of the negative health consequences of this disease. In addition, because an accurate perception of risk for having or developing type 2 diabetes is a pivotal determinant of healthy behavior (Schwarzer, 2001), diabetes campaigns recently put a lot of effort in promoting screening behavior. For instance, the Diabetes UK’s Measure Up campaign depicting a man and women with tape measured waists stated “If your waist is wider than this, you could need a test for type 2 diabetes” (Diabetes UK, 2007). People thinking this applied to them were highly recommended to further examine their risk. For example, people could take a simple two-minute test on the Internet (see also the websites of

* This chapter is based on Van Koningsbruggen & Das (in press).
the American Diabetes Association and the Dutch Diabetes Federation for similar online risk tests).

Unfortunately, reading about type 2 diabetes and its life-threatening complications does not necessarily motivate at-risk people to take an online risk test. A great deal of research shows that people most vulnerable to a health threat often respond defensively to threatening health information. This defensiveness is expressed in downplaying the seriousness of the health risk (Jemmott et al., 1986), questioning the accuracy of the threatening information (Ditto & Lopez, 1992) or evidence presented in the message (Kunda, 1987), and processing the information in a hyper-critical way (Liberman & Chaiken, 1992). Defensive processing of relevant health information thus presents an obstacle for health campaigns, and more insight into the origins of this increased defensiveness is needed in order to increase the effectiveness of these campaigns.

Several theories suggest that defensive responses to threatening health information originate from concerns over self-worth (Aronson E., 1969; Steele, 1988; Taylor & Brown, 1988; Tesser & Cornell, 1991). In particular, self-affirmation theory (Steele, 1988) - a theory about how people deal with concerns over self-worth - proposes that people respond defensively, because they are highly motivated to protect and maintain a global sense of self-integrity. When threatened, for instance, by reading health information, people will be motivated to restore their sense of self-integrity. One way to satisfy this motive is to respond defensively to this information. By derogating, minimizing, or avoiding threatening health information people are able to restore and maintain their self-integrity. The theory further proposes that this maintenance of self-integrity is a flexible process. Because people are concerned with their global sense of self-integrity, they can also restore self-integrity by drawing upon alternative sources that are unrelated to the provoking threat, such as reflecting upon an unrelated but important value (Steele, 1988). Thus, when threatened in one domain
(e.g., health), people can restore their global self-integrity by affirming another important domain (e.g., social skills). Such an unrelated “self-affirmation” (i.e., reflecting upon an important self-aspect) restores global self-integrity, thereby reducing the need to respond defensively to the specific threat. In terms of theories regarding the use of threat appeals in health communications (Leventhal, 1970; Witte, 1992), self-affirmation may thus promote danger control (associated with motivations to think about the health message and adaptive behavioral actions) over fear control (associated with denial or derogation of the health message and maladaptive behavioral actions).

The prediction that self-affirmation decreases defensiveness has been supported across a wide variety of domains and research paradigms (for a review, see Sherman & Cohen, 2006). Several recent studies confirmed the relevance of self-affirmation processes in the health domain as well (e.g., Harris et al., 2007; Harris & Napper, 2005; Reed & Aspinwall, 1998; Sherman et al., 2000). Self-affirmation has been found to increase attendance to and acceptance of threatening health messages, perceptions of personal risk, and intentions to take precautions regarding health risks such as smoking (Harris et al., 2007), excessive caffeine consumption (Reed & Aspinwall, 1998; Sherman et al., 2000, Study 1), alcohol consumption (Harris & Napper, 2005), and unsafe sex (Sherman et al., 2000, Study 2). Some of these effects even remained stable over a period of one month (Harris & Napper, 2005).

Of course, the aim of most health promotion campaigns is not merely to inform people about health risks, but to promote behavior change (Stroebe, 2000). However, to date, little is known about the effects of self-affirmation on actual behavior. So far, most studies examined the impact of self-affirmation on self-report measures of preventive behavior (Epton & Harris, 2008; Harris et al., 2007; Harris & Napper, 2005; Reed & Aspinwall, 1998). Preventive behaviors are directed at maintaining one’s health (e.g., exercising) and are typically seen as involving little or no risk because they encompass little uncertainty (Devos-Comby &
Salovey, 2002; Rothman & Salovey, 1997). While there is some evidence that self-affirmation can promote (self-reported) consumption of fruit and vegetables (Epton & Harris, 2008) and the purchase of condoms (Sherman et al., 2000), other studies consistently reported no effects of self-affirmation on preventive behaviors (Harris et al., 2007; Harris & Napper, 2005; Reed & Aspinwall, 1998).

Even less is known about the impact of self-affirmation on screening or detection behaviors. Unlike preventive behaviors, screening or detection behaviors potentially inform people of a severe health problem and are typically considered high risk as they encompass high uncertainty (Devos-Comby & Salovey, 2002; Rothman & Salovey, 1997). For instance, doing a diabetes risk test involves the risk of learning one is highly vulnerable to have or develop this disease. As a consequence, people may be particularly reluctant to undertake such actions. Indeed, research on screening (or detection) behaviors suggest that especially people who are high at-risk are most unwilling to engage in screening behaviors (e.g., Eaker, Adami, & Sparen, 2001; Fako, 2006; Weitzman, Zapka, Estabrook, & Goins, 2001; Welkenhuysen, Evers-Kiebooms, & Van den Berghe, 1997).

It remains to be established whether self-affirmation can promote screening behaviors. However, there is some encouraging evidence that suggests the potential of self-affirmation in this context. Particularly, self-affirmation has been shown to make at-risk participants attend more quickly to risk-confirming information relative to risk-neutral or risk-disconfirming information (Reed & Aspinwall, 1998). This suggests that self-affirmation may also promote intentions to assess one’s risk and screening behavior that can be risk confirming. This is all the more important considering the primary goal of recent diabetes campaigns which is to promote screening behaviors as an important first step in the prevention and detection of this disease (International Diabetes Federation, 2006). The present study provides a first test of the impact of self-affirmation on screening behavior.
Additionally, this study extends previous findings by testing the effect of self-affirmation on the relationship between risk level and persuasive outcomes, drawing on theories regarding the use of threat appeals in health communications (Leventhal, 1970; Witte, 1992). If self-affirmation promotes danger control over fear control when faced with threatening health information, affirmed people should be less likely to derogate health information. Most previous research supported this assumption by demonstrating positive effects of self-affirmation on measures related to danger control (e.g., attitudes and intentions, Reed & Aspinwall, 1998; Sherman et al., 2000). The present study extends these findings by testing the effect of self-affirmation on a measure of message derogation. This explicit measure of defensiveness is related to the persuasive outcome when fear control dominates over danger control (Witte, 1992). When self-affirmation promotes danger control, self-affirmation should decrease derogation of threatening health information.

Finally, previous research suggests that self-affirmation may be only beneficial among people at-risk, and can even have an adverse effect among those not at-risk (Briñol et al., 2007; Harris & Napper, 2005). For instance, self-affirmation has been found to reduce (non-targeted) risk perceptions among participants not at-risk (Harris & Napper, 2005). Moreover, under non-threatening conditions, Briñol and colleagues (2007) showed that a self-affirmation prior to reading a message reduced information processing and produced more negative attitudes toward the object of evaluation. These effects seem to occur because self-affirmation increases people’s confidence in their current views when not particularly threatened, thereby reducing the need to consider information that might lead to change (cf. Briñol et al., 2007; also see, e.g., Tiedens & Linton, 2001). Thus, the effects of self-affirmation may be moderated by risk-level: whereas self-affirmation reduces persuasion among people not at-risk, self-affirmation seems to enable at-risk people (i.e., the target audience of health promotion campaigns) to pay attention to the informational value of the health message,
instead of focusing on its implications for self-integrity (Sherman & Cohen, 2006). The present study further tests the moderating role of risk level.

**Study 2.1**

In the present study, we experimentally manipulated self-affirmation by allowing participants to affirm a value that was either personally important or unimportant to them (cf. Sherman et al., 2000), and measured participants’ risk level prior to reading threatening type 2 diabetes information. We predicted that for at-risk participants, self-affirmation would decrease derogation of threatening type 2 diabetes information, positively fueling intentions to assess personal risk to have or develop type 2 diabetes, and consequently promote online risk test taking behavior. In line with the observations that self-affirmation may have an adverse effect under non-threatening conditions (Briñol et al., 2007; Harris & Napper, 2005), we predicted that for participants not at-risk, self-affirmation would not affect message derogation, and would decrease intentions to assess personal risk and online risk test taking behavior.

**Method**

*Design and Participants*

The study was conducted via the Internet, and participants were recruited via banners placed on the university website. Participants could enroll if they had not been diagnosed with any type of diabetes, never had been tested, and were not familiar with the Dutch diabetes campaign (i.e., we asked participants whether they were familiar with the health education campaign “Kijk op Diabetes”; this item had a “yes” or “no” option). A total of 84 participants who satisfied these inclusion criteria participated in the study, of which 26 males and 58 females with a mean age of 38.19 years ($SD = 14.58$; Range 19 – 66 years). The computer
randomly assigned participants to either the self-affirmed status condition ($n = 36$) or the non-affirmed status condition ($n = 48$). As compensation, participants could take part in a lottery in which they could win gift vouchers ($2 \times €25$, approximately $35$ per voucher). The research was conducted in accordance with APA ethical standards.

**Procedure and Materials**

Participants were informed that they would be taking part in two separate studies, one about values and the other about health education, which was explained to entail evaluating a message for possible use in a health campaign. The first part of the experiment was aimed at identifying participants’ risk level.

**Risk level.** To assess participants’ risk level, we adopted the questions of the type 2 diabetes risk test that is part of the Dutch diabetes campaign (“Kijk op Diabetes”). Participants responded to seven questions, and points were assigned for every answer given following the scoring system as developed by the Dutch Diabetes Federation (NDF). Participants were not aware that these questions assessed their risk on type 2 diabetes; they were simply asked to complete some personal questions about their life situation, and it was emphasized that their answers were confidential and anonymous.

First, participants indicated their age (< 45 years = 0 points, 45-54 years = 2 points, 55-64 years = 3 points, > 64 years = 4 points), height and weight. The latter two questions were used to calculate participants’ Body Mass Index (BMI; 10-25 = 0 points, 26-30 = 1 point, > 30 = 3 points). Then, participants responded to the following questions: “Are you physically active for at least 30 minutes every day?” (yes = 0 points, no = 2 points), “Do you use high blood pressure medication?” (yes = 2 points, no = 0 points), “Have you ever had a blood sugar level that was on the high side, for example, during illness or when you were pregnant?” (yes = 2 points, no = 0 points), “Does anyone in your family suffer from (type 1 or type 2) diabetes?” (no = 0 points, yes: my grandfather, grandmother, aunt, uncle, nephew,
niece = 3 points, yes: my father, mother, brother, sister or child = 5 points). Scores on the test could range from 0 through 21 points, with higher scores indicating a higher risk level. The mean score on the risk test was 2.86 points (SD = 2.59; Range 0-10 points).

Self-affirmation. The manipulation of self-affirmation was based on a frequently used procedure (e.g., Koole et al., 1999; Sherman et al., 2000), whereby participants complete a brief value scale that either matched their most or least important value. Participants were first presented with the six values of the Allport-Vernon-Lindzey study of Values (AVL; Allport, Vernon, & Lindzey, 1960), which they had to rank according to their personal importance. The values listed were: science, business, art, social, politics, and religion. After ranking the values, participants completed one of the AVL-subscales (science, business, art, social, politics, or religion) that consist of 10 statements with two possible answers. Participants were asked to choose between the answers. For every statement, one answer reflected the scale’s main value (e.g., religion) and the other answer reflected one of the remaining values (science, business, art, social, politics). For example, a statement from the religion scale is: “It is more important to me that my child receives education in: religion or political organization.” Participants in the self-affirmed status condition completed the scale that matched their previously indicated most important value. Participants in the non-affirmed status condition completed the scale that matched their least important value. Thus, for participants in the self-affirmed status condition it was possible to affirm their most important value ten times. However, participants in the non-affirmed status condition were not given this opportunity.

Health message. After the manipulation of self-affirmation, participants read a health message (approximately 560 words), entitled “What everybody should know about type 2 diabetes”. The message was closely based on a brochure published by the Dutch Diabetes Foundation (Diabetes Fonds, 2006). The first part of the message explained what type 2
diabetes is and described several symptoms. The second part described risk factors associated with type 2 diabetes. Then, participants read about the health problems people can experience due to this disease, for example, increased risk of cardiovascular disease, problems with kidneys and eyes, dementia. The message closed with the recommendation to do a type 2 diabetes risk test.

After reading the health message, participants completed the dependent measures. They were then probed for suspicion about the purpose of the study, and then were debriefed. None of the participants guessed any aspect of the true purpose of the study, and none of them reported a suspicion that the two studies were related.

**Dependent Variables**

*Message derogation.* Participants rated three items that measured message derogation on a 7-point scale (“The message was distorted”, “The message was exaggerated”, and “The message was too extreme”; 1 = strongly disagree, 7 = strongly agree; α = .94). Higher scores indicate greater message derogation.

*Intentions.* Participants were informed that the NDF provided an online risk test for type 2 diabetes. To assess participants’ intentions to do the online test, they were asked “How likely is it that you are going to do the online type 2 diabetes risk test?” (1 = very unlikely, 7 = very likely). Higher scores indicate greater intentions to do the online risk test.

*Screening behavior.* Participants were offered the opportunity to do the online risk test. They could click on the link that would direct them to this online test. Participants that clicked on the link to the online risk test were coded 1, participants that did not use the clickable link were coded 0 (i.e., the behavioral measure was dummy coded).⁴
Chapter 2

Results

Randomization Check

Participants in the self-affirmed status and non-affirmed status condition were compared on age, gender, and risk level. No analysis was significant, $F_s(1, 82) < .60$, $p_s > .44$, all $\eta^2_p < .008$, suggesting that randomization to self-affirmation status condition was successful.

Manipulation Check Self-Affirmation

The validity of the self-affirmation manipulation was assessed by counting the number of times participants endorsed the manipulated value. A score of 1 was given when participants chose the manipulated value (thus affirming their least or most important value). A score of 0 was given when participants chose the filler answer. Thus, total scores on the affirmation task ranged from 0 to 10, with higher scores indicating higher affirmation. A one-way analysis of variance (ANOVA) confirmed that self-affirmed participants endorsed the manipulated value more often ($M = 6.92$, $SD = 1.70$) than non-affirmed participants ($M = 3.27$, $SD = 1.81$), $F(1, 82) = 88.20, p < .001$, $\eta^2_p = .52$.

Overview of Analytic Strategy

Hierarchical regression analyses tested the main effects of self-affirmation status (coded as $-1 = $ non-affirmed status, $1 = $ self-affirmed status) and risk level (mean centered) in Step 1, and the interaction term in Step 2, on the dependent measures. Where the predicted interaction was significant, we computed simple slopes for the dependent variable at two levels of the moderator (i.e., risk level): one standard deviation below the mean (i.e., participants not at-risk) and one standard deviation above the mean (i.e., at-risk participants) (cf. Aiken & West, 1991). Means, standard deviations, and intercorrelations for the study variables are presented in Table 2.1.
### Table 2.1. Means, standard deviations, and intercorrelations of risk level, message derogation, intentions, and screening behavior

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Risk level</td>
<td>2.86</td>
<td>2.59</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Message derogation</td>
<td>2.27</td>
<td>1.35</td>
<td>.14</td>
<td>-.26*</td>
<td>1.00</td>
</tr>
<tr>
<td>3</td>
<td>Intentions</td>
<td>4.17</td>
<td>2.10</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Screening behavior(^a)</td>
<td>0.37</td>
<td>0.49</td>
<td>.19</td>
<td>-.17</td>
<td>.60**</td>
</tr>
</tbody>
</table>

*Note. N = 84. \(^a\)Point-biserial correlation coefficients for intercorrelations with screening behavior are reported (all other are Pearson correlation coefficients). \(^*\)p < .05. \(^{**}\)p < .001.

### Message Derogation

The main effects of self-affirmation status and risk level were not significant (see Table 2.2). Most importantly and as predicted, results indicated that the interaction between self-affirmation status and risk level had a significant relation with message derogation. Self-affirmation decreased message derogation among at-risk participants (\(B = -0.48, t = -2.37, p < .05\)), but not among participants not at-risk (\(B = 0.18, t < 1, p = .39\); see Figure 2.1).

### Table 2.2. Summary of hierarchical regression analyses for message derogation

<table>
<thead>
<tr>
<th>Predictor or statistic</th>
<th>Message derogation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Self-affirmation</td>
<td>-0.16</td>
</tr>
<tr>
<td>Risk level</td>
<td>0.08</td>
</tr>
<tr>
<td>Self-affirmation x Risk level</td>
<td>–</td>
</tr>
<tr>
<td>Regression constant</td>
<td></td>
</tr>
<tr>
<td>R(^2)</td>
<td>.03</td>
</tr>
</tbody>
</table>

*Note. N = 84. \(^a\)MS\(_{error}\) = 1.71. \(^*\)p < .05.
Figure 2.1. Regression slopes arising from the relation between self-affirmation status and message derogation for at-risk participants (one SD above the mean of risk level) versus participants not at-risk (one SD below the mean of risk level).

**Intentions**

Results indicated that risk level was positively related to intentions, whereas the main effect of self-affirmation status was not significant (see Table 2.3). However, as predicted, results indicated that the interaction between self-affirmation status and risk level had a significant relation with intentions. Self-affirmation increased intentions to do the online risk test among at-risk participants ($B = 0.64, t = 2.11, p < .05$), but decreased intentions among participants not at-risk ($B = -0.96, t = -3.06, p < .01$; see Figure 2.2).
How Self-Affirmation Affects Health Message Derogation

Table 2.3. Summary of hierarchical regression analyses for intentions

<table>
<thead>
<tr>
<th>Predictor or statistic</th>
<th>Step 1</th>
<th>Step 2^a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>B</em></td>
<td><em>SE B</em></td>
</tr>
<tr>
<td>Self-affirmation</td>
<td>-0.14</td>
<td>0.23</td>
</tr>
<tr>
<td>Risk level</td>
<td>0.12</td>
<td>0.09</td>
</tr>
<tr>
<td>Self-affirmation x Risk level</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Regression constant</td>
<td>4.10</td>
<td>0.22</td>
</tr>
<tr>
<td>R^2</td>
<td>.03</td>
<td>.16</td>
</tr>
</tbody>
</table>

Note. *N = 84.* ^a^Mean error = 3.83. *p < .05. **p < .01.

Figure 2.2. Regression slopes arising from the relation between self-affirmation status and intentions to do the online type 2 diabetes risk test for at-risk participants (one SD above the mean of risk level) versus participants not at-risk (one SD below the mean of risk level).

Screening Behavior

The effects of the independent variables on the behavioral measure were tested with logistic regression analysis. The main effects of self-affirmation status and risk level were not
significant (see Table 2.4). However, as predicted, results indicated that the interaction between self-affirmation status and risk level had a significant relation with behavior. Subsequent analyses showed that self-affirmation had a positive effect on behavior among at-risk participants ($B = 2.18$, $Wald (1) = 5.46$, $p < .05$), but a negative effect among those not at-risk ($B = -4.12$, $Wald (1) = 7.70$, $p < .01$). These results indicate that self-affirmation increased the likelihood to do the online type 2 diabetes risk test among at-risk participants, but decreased this likelihood among those not at-risk (see Figure 2.3).

Table 2.4. Summary of hierarchical regression analyses for screening behavior

<table>
<thead>
<tr>
<th>Predictor or statistic</th>
<th>Step 1</th>
<th></th>
<th>Step 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$B$</td>
<td>$SE$</td>
</tr>
<tr>
<td>Self-affirmation</td>
<td>-0.32</td>
<td>0.47</td>
<td>-0.97</td>
<td>0.68</td>
</tr>
<tr>
<td>Risk level</td>
<td>0.15</td>
<td>0.09</td>
<td>-0.11</td>
<td>0.12</td>
</tr>
<tr>
<td>Self-affirmation x Risk level</td>
<td>–</td>
<td>–</td>
<td>1.21*</td>
<td>0.40</td>
</tr>
<tr>
<td>Regression constant</td>
<td></td>
<td></td>
<td>-0.44</td>
<td>0.30</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.05</td>
<td></td>
<td>.32</td>
<td></td>
</tr>
</tbody>
</table>

Note. $N = 84$. *Nagelkerke $R^2$. * $p < .01$. 
Figure 2.3. Regression slopes arising from the relation between self-affirmation status and screening behavior for at-risk participants (one SD above the mean of risk level) versus participants not at-risk (one SD below the mean of risk level).

Mediation

Following Baron and Kenny (1986), we tested whether the difference in message derogation mediated the impact of self-affirmation on intentions to do the online risk test for participants at-risk (cf. Harris & Napper, 2005). Self-affirmation predicted message derogation (i.e., the potential mediator), $B = -0.48, t = -2.37, p < .05$, and also intentions, $B = 0.64, t = 2.11, p < .05$. When intentions were regressed simultaneously on message derogation and self-affirmation, message derogation predicted intentions, $B = -0.34, t = -2.08, p < .05$, and the previously significant effect of self-affirmation became non-significant, $B = 0.48, t = 1.55, p = .13$. A subsequent Sobel/Goodman test of mediation proved marginally significant ($Z = 1.65, p < .10$), suggesting mediation.

We also tested whether the difference in intentions mediated the impact of self-affirmation on risk test taking behavior. For at-risk participants, self-affirmation predicted intentions (i.e., the potential mediator), $B = 0.64, t = 2.11, p < .05$, and also behavior, $B =$
0.16, $t = 2.31, p < .05$. When behavior was regressed simultaneously on intentions and self-affirmation, intentions predicted behavior, $B = 0.12, t = 5.34, p < .001$, and the previously significant effect of self-affirmation became non-significant, $B = 0.09, t = 1.38, p = .17$. A subsequent Sobel/Goodman test of mediation proved significant ($Z = 1.99, p < .05$), indicating that intentions mediated the impact of self-affirmation on risk test taking behavior for participants at-risk. For participants not at-risk, self-affirmation also predicted intentions (i.e., the potential mediator), $B = -0.96, t = -3.06, p < .01$, and behavior, $B = -0.24, t = -3.41, p < .01$. When behavior was regressed simultaneously on intentions and self-affirmation, intentions predicted behavior, $B = 0.12, t = 5.34, p < .001$, and the effect of self-affirmation was reduced, but remained significant, $B = -0.13, t = -2.01, p < .05$. A subsequent Sobel/Goodman test of mediation proved significant ($Z = 2.69, p < .01$), indicating partial mediation.

**Correlations**

Another way of looking at the effects of self-affirmation is to test whether self-affirmation reduces the often observed relation between risk level and maladaptive outcomes (e.g., Sherman et al., 2000). That is, if self-affirmation promotes danger control, risk level should be positively related to intentions and behavior among self-affirmed participants. Correlational analyses showed that, for self-affirmed participants, risk level was unrelated to message derogation, $r (36) = -.16, p = .35$, and positively related to intentions to do the online risk test, $r (36) = .57, p < .001$, and behavior, $r_{pb} (36) = .67, p < .001$. In contrast, for non-affirmed status participants, risk level was positively related to message derogation, $r (48) = .33, p < .05$, and was not related to intentions, $r (48) = -.16, p = .29$, and behavior, $r_{pb} (48) = -.13, p = .37$. 

Chapter 2
Discussion

Although information about type 2 diabetes and its life-threatening implications becomes relevant for more and more people, research has shown that at-risk people often respond defensively to this kind of information (e.g., Liberman & Chaiken, 1992). In the present research, we tested the impact of self-affirmation - a self-regulatory mechanism that has been shown to affect the acceptance of threatening messages - on responses to threatening type 2 diabetes information. The results show that self-affirmation decreased defensive responses to threatening information about type 2 diabetes, and promoted adaptive behavioral action in the target audience.

Specifically, at-risk participants who were given the opportunity to self-affirm, derogated the threatening information less and expressed greater intentions to do an online type 2 diabetes risk test than their non-affirmed counterparts. More importantly, self-affirmed (vs. non-affirmed) at-risk participants were more likely to assess their personal risk for having or developing type 2 diabetes by taking an online risk test. This is especially encouraging, given that people at-risk are often most reluctant to undertake such actions (e.g., Eaker et al., 2001; Welkenhuysen et al., 1997). While people often perceive screening or detection behaviors as risky because of the outcome-uncertainty associated with these behaviors (Devos-Comby & Salovey, 2002; Rothman & Salovey, 1997), self-affirmation enables people to focus on the long term benefits of this behavior (i.e., obtaining treatment to reduce the impact of disease when one runs the risk of having or developing this disease). To our best knowledge, this finding is the first to suggest that self-affirmation may play a pivotal role in promoting screening behaviors. Moreover, since risk test taking is an important primary step in the prevention and detection of type 2 diabetes (e.g., Borch-Johnsen, Lauritzen, Glümer, & Sandbæk, 2003; International Diabetes Federation, 2006; Wareham & Griffin, 2001), this result underscores the potentially applied value of interventions derived from self-affirmation.
theory. The results further suggest that for at-risk participants, the effect of self-affirmation on intentions to take precautions was mediated by the decrease in message derogation. In addition, intentions to engage in precautionary behavior mediated the impact of self-affirmation on online type 2 diabetes risk test taking.

Inspection of the correlations between participants’ risk level and the dependent measures provides further insight into the beneficial effects of self-affirmation when faced with threatening health information. Whereas among self-affirmed participants risk level was unrelated to message derogation, and highly related to both intentions and risk test taking, risk level for non-affirmed participants was positively related to message derogation, and unrelated to intentions and behavior. Thus, self-affirmation enabled at-risk people to focus on the informational value of the threatening health information instead of its implications for self-integrity. Moreover, by demonstrating the positive impact of self-affirmation on measures that have not been employed in previous studies (i.e., message derogation and screening behavior), our findings strengthen the case that self-affirmation promotes danger control over fear control among at-risk people. In addition, the current study generalizes the findings of previous self-affirmation research in the health domain by employing a new health topic.

This study also confirmed the moderating role of risk level (cf. Briñol et al., 2007; Harris & Napper, 2005). Among participants not at-risk, self-affirmation decreased intentions to do an online type 2 diabetes risk test and reduced the likelihood of doing such a test. As expected, self-affirmation did not affect our measure of information processing among participants not at-risk, that is, no effect was found on message derogation. This finding is in line with previous research showing that affirming participants prior to reading information that is not particularly threatening to them decreases the degree of information processing, resulting in less favorable attitudes toward the object of evaluation (Briñol et al., 2007). In the present study, participants (indirectly) evaluated doing a type 2 diabetes risk test, by
indicating their willingness to do this test and by deciding to do the risk test. Among participants not at-risk, self-affirmation may have increased confidence in their current views, resulting in decreased willingness to do the online risk test. Although the present study did not directly test this account, recent research demonstrated that self-affirmation indeed increases confidence when not particularly threatened (Briñol et al., 2007). This increased confidence may make people not at-risk even feel relatively invulnerable for diseases other than type 2 diabetes (cf. Harris & Napper, 2005), thereby impeding adaptive responses to health information about these diseases. In sum, the present findings stress the importance of carefully attending to people’s risk level in determining whether self-affirmation will have beneficial effects or not.

Potential Limitations and Future Directions

This study included a relatively “healthy” sample: none of the participants scored extremely high on risk level. Likewise, in the present sample, participants were not highly defensive as message derogation was rather moderate in general. Even in spite of our relatively “healthy” sample, higher risk levels were associated with higher levels of message derogation when participants were not self-affirmed. It seems nonetheless important for future studies to test the potential of self-affirmation to promote type 2 diabetes risk test taking among people who are very susceptible to this disease; higher levels of risk may increase defensiveness and this may affect the effectiveness of the self-affirmation.

In the present study we were eager to test whether self-affirmation could promote type 2 diabetes risk test taking. This focus was motivated by the observation that screening is regarded as an important primary step in the prevention and detection of type 2 diabetes (e.g., International Diabetes Federation, 2006). In this light, it is encouraging that we established that self-affirmation can indeed promote intentions and online risk test taking among at-risk
participants. Of course, the ultimate goal of many health promotion campaigns is to change people’s unhealthy behaviors (Stroebe, 2000). In the present context, this means convincing people, for instance, to increase their level of physical activity since this greatly reduces one’s risk of developing type 2 diabetes or at least reduce its impact. Because effects of experimental manipulations on actual behavior are difficult to measure, self-reports of behavior change are often the best we can get. Most studies that used such self-report measures (e.g., cigarette consumption) did not establish effects of self-affirmation on preventive behaviors (Harris et al., 2007; Harris & Napper, 2005; Reed & Aspinwall, 1998). More encouraging, however, are recent findings showing that self-affirmation increased self-reported fruit and vegetable consumption (Epton & Harris, 2008). Taken together, this study provides evidence that self-affirmation can motivate people to take a first step (see also Sherman et al., 2000, Study 2), however, the impact of self-affirmation on actual preventive behavior change remains an important agenda for future studies.

An alternative explanation for the observed effects of self-affirmation is that the manipulation improved participants’ mood and that the positive mood functioned as a resource that participants at-risk used to face up to the threatening information (e.g., Raghunathan & Trope, 2002; Tesser & Cornell, 1991). However, it seems unlikely that a mood explanation accounts for the present findings. Typically, self-affirmation studies in which similar value manipulations have been used do not find effects on mood (e.g., Briñol et al., 2007; Cohen, Aronson, & Steele, 2000; Fein & Spencer, 1997; Schmeichel & Martens, 2005; Sherman et al., 2000). Likewise, in the present study, we found no effect of self-affirmation on negative affect. Nevertheless, both self-affirmation and a positive mood seem to operate as a resource that at-risk people use to deal with threatening information, and the effects on persuasion do show a resemblance. Therefore, as suggested by Tesser (2000), future studies may want to examine whether self-affirmation produces affect that people do
not experience consciously (e.g., see Koole et al., 1999 for such a study outside the health domain) to gain more insight in how self-affirmation is related to affective processes.

**Concluding Remarks**

Although much information about type 2 diabetes and its life-threatening complications is available, it is often difficult to get this information across to the public. This is especially the case for people at-risk as they are most reluctant to act upon this important information. This study shows that self-affirmation can promote screening behavior among a target audience. After being self-affirmed, people at-risk derogated threatening type 2 diabetes information less and were more likely to assess their personal risk for developing this disease. This is important, as risk test taking is an important primary step in the prevention and detection of type 2 diabetes. Since screening behaviors are also relevant in detecting other diseases (e.g., breast self-examination for detecting breast cancer), self-affirmation may have a great potential to promote a broad range of screening behaviors.