



## Emotion, Health Decision-making, and Health Behaviour

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## Emotion, Health Decision Making, and Health Behaviour

Efforts aimed at understanding and changing health decisions and behaviour have relied on theoretical frameworks or models comprised of social-cognitive determinants, such as knowledge, risk perception, attitudes, social norms, and self-efficacy (Conner & Norman, 1996; 2017; Noar & Zimmerman, 2005). These frameworks, and the interventions based upon them, largely do not take affective states into account. However, converging evidence suggests that emotion, stress, motivation, and other affective states are essential to decision making and behaviour (e.g., Damasio, 1994; Lerner & Keltner, 2000; 2001; Loewenstein & Lerner, 2003).

Moreover, health decisions and behaviour often take place in emotionally-laden contexts. For example, decisions about cancer treatment involve managing fears of cancer, treatment side effects, and the burden and fears of close others who must manage the emotional consequences of the diagnosis (Ellis & Ferrer, 2017; Ferrer, Green, & Barrett, 2015). Decisions about sexual risk and prevention take place in the context of arousal and lust (Ariely & Loewenstein, 2006; George et al., 2009). Health promoting behaviour, like healthy eating and exercise, are compromised when stress is high, uncontrollable, and chronic, or when emotion regulation is poor (e.g., Ferrer, Green, Oh, Hennessey, & Dwyer, 2017; Schnohr, Kristensen, Prescott, & Scharling, 2005; Tomiyama, Dallman, & Epel, 2011). Thus, the relative dearth of research focused on how affective states contribute to and influence health decision making and behaviour is an important gap in the literature. It is critical to cultivate research to fill this gap to inform effective intervention development and implementation efforts.

To date, the affective state most likely to be examined in a health context is stress. Stress research largely focuses on associations among stressors (i.e., social or environmental demands for

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5 which an individuals' coping resources are absent or exceeded) and biobehavioral responses to  
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7 stressors, including health biomarkers and outcomes. Responses include, but are broader than, negative  
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9 affect and behaviour, also encompassing cognitive responses, physical symptoms, and physiological  
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11 changes (e.g., Kemeny, 2009; Lazarus & Folkman, 1984). Stress research often links to biological  
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13 health outcomes, although some research examines stress as a predictor of decision making (e.g.,  
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15 Jamieson, Koslov, Nock, & Mendes, 2013; Kassam, Koslov, & Mendes, 2009; Lighthall, Mather, &  
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17 Gorlick, 2009), including health behaviour (e.g., Adam & Epel, 2007). Stress as a general concept,  
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19 however, suffers from imprecision in definition and measurement, and often the heterogeneity of  
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21 "stress" prevents systematic and theoretical integration of varied research programmes (Kagan, 2016).  
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23 Biological approaches to chronic and acute stress reactivity have benefited from methodological  
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25 advances. However, there have been fewer advances on theoretical models that attempt to present a  
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27 coherent understanding of how psychological and environmental factors contribute to (and interact  
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29 with) the experience of stress and its consequences for decision making and behaviour.  
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35 Research on discrete emotions (i.e., specific states like anger, fear, sadness, or happiness) and  
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37 mood (e.g., general positive and negative affective states) and decision making is accumulating  
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39 (Lerner, Li, Valdesolo, & Kassam, 2015). However, this research largely takes place outside a health  
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41 decision-making context, and focuses less on the biological mechanisms linking the psychological  
42  
43 states to the behavioural outcomes. Emotion research is theoretically-rich, with complex frameworks  
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45 that build upon empirical knowledge from previous theoretically-informed work. Traditionally,  
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47 research on emotion and health behaviour has not fully capitalized on the theoretical perspectives  
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49 offered by affective science. Instead, it targets a narrow and colloquial conceptualization of an emotion  
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51 like fear based on assumptions that this will uniformly facilitate preventive actions (Witte & Allen,  
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53 2000), drawing on more sophisticated frameworks that underscore the various outcome tendencies that  
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4 can manifest from what seems to be a specific emotion category (e.g., Barrett, 2013; 2014). Such  
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6 research has demonstrated that translating affective science to health research is not straightforward  
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8 and can result in unintended negative effects on health judgments and decisions. Thus, more recent  
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10 efforts have been made to stimulate affective science and health work that capitalizes on theoretical  
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12 frameworks and rigorous methodology employed elsewhere (DeSteno, Kubzansky, & Gross, 2013;  
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14 Ferrer et al., 2015; Ferrer, Klein, Lerner, Reyna, & Keltner, 2016; Williams & Evans, 2014; Williams,  
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16 Rhodes, & Conner, 2017).

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21 Both within and outside a health context, stress and emotion often examine the same types of  
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23 problems from different disciplinary lenses— indeed, a commonly held view is that stress is studied in  
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25 medical schools whereas emotion is studied in psychology departments. Indeed, both stress and  
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27 emotion involve cognitive appraisals of predictability and controllability, social components, and  
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29 elements of physical discomfort or pleasure, and both incorporate subjective experience and  
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31 physiological response (e.g., Barrett, 2014; Blascovich, Mendes, Hunter, & Salomon, 1999;  
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33 Blascovich et al., 2011; Dickerson, Gruenewald, & Kemeny, 2009; Ekkekakis & Petruzzello, 1999;  
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35 Lazarus, 1991; Lerner & Keltner, 2001; Mendes, Major, McCoy, & Blascovich, 2008; Smith &  
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37 Ellsworth, 1985). Similarly, emotion regulation and coping with stress involve attempts to  
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39 downregulate the subjective experience, physiological responses, or expressive communications of  
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41 negative affect, or attempts to attenuate the influence of these on subsequent behaviour (Gross, 2015;  
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43 Jamieson, Mendes, & Nock, 2013; Mendes, Reis, Seery, & Blascovich, 2003; Lazarus & Folkman,  
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45 1984).

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51 Given conceptual overlap, there have been theoretical attempts to integrate the two fields (e.g.,  
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53 Feldman, Cohen, Hamrick, & Lepore, 2004; Ganzel, 2010; Lazarus, 1994, 1999; Lerner, Dahl, Hariri,  
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55 & Taylor; Leventhal, Patrick-Miller, Leventhal, & Burns, 1997; Taylor, Lerner, Sage, Lehman, &  
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4 Seeman, 2004; Zautra, 2003), but health research has not leveraged these integrations widely. As such,  
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6 research is framed, and problems are examined differently depending on the disciplinary lens through  
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8 which it is viewed, resulting in different theoretical frameworks and methodological traditions, each  
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10 with decided strengths and weaknesses. Stress research has a strong emphasis on biological outcomes  
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12 (e.g., Baum, Lorduy, & Jenkins, 2011; Dhabhar, 2011; Greenberg, Carr, & Summers, 2002; Hash-  
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14 Converse & Kusnecov, 2011; McCaffery, 2011; McEwen, 1995), whereas emotion has less developed  
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16 models of biological responding. Emotion has developed elaborate theories about how emotion is  
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18 constructed and its function (Barrett, 2006; Gross & Thompson; Keltner & Gross, 1999; Panksepp,  
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20 2007). In contrast, stress research has not developed nearly as sophisticated theories regarding the  
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22 psychological antecedents, experiential aspects, or varieties of stress, and has focused instead on  
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24 environmental stressors and physiological responses (Cohen, Janicki-Deverts, & Miller, 2007; Miller,  
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26 Chen, & Cole, 2009). Perhaps, as a result, emotion researchers have considered the temporal dynamics  
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28 of emotional responding (i.e., the generation and regulation of experience and physiology) more so  
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30 than have stress researchers (Gross & Barrett, 2011). Importantly, these differences reflect the focus of  
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32 each field, rather than a meaningful phenomenological difference.  
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40 Because the existing bodies of research examining stress and emotion have proceeded largely  
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42 in parallel, with little crosstalk, progress on affective determinants of health decision making that has a  
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44 strong theoretical basis and a sophisticated biologic approach has been stifled. The goal of this special  
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46 issue is to bring together these diverse disciplinary perspectives, to demonstrate how these perspectives  
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48 can be unified to facilitate the development of theory-informed interventions as well as the generation  
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50 of basic knowledge from applied work. Thus, papers are organized along the research continuum, from  
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52 theory generation to use-inspired, encompassing basic to applied. This basic-to-applied-to-basic  
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4 translational model for health research is increasing in popularity (Czajkowski et al., 2016; Glasgow,  
5 2008; Sussman et al., 2006; see also: <https://obssr.od.nih.gov/about-us/strategic-plan/>).

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9 The theoretically-rich perspectives of emotion research, married with stress research's intense  
10 focus on health applications, biological factors, and measurement, can facilitate important use-inspired  
11 programmes of research. These projects can be leveraged by health researchers to develop more  
12 theory-informed interventions that can replace a more colloquial understanding of affective  
13 determinants with a theoretically and empirically informed approach. Applied intervention work, in  
14 turn, can leverage measurement and methodological rigour from stress research and theoretically-  
15 informed perspectives from emotion research to develop mechanistic hypotheses. This intervention-as-  
16 experiment or mechanistic inquiry approach can be back-translated to inform basic-inspired work by  
17 emotion and stress researchers. This cycle will ensure that the basic discoveries of emotion and stress  
18 are situated within ecologically-valid decision making and behavioural contexts and that interventions  
19 intended to improve health decision making and behaviour are informed by empirically-supported  
20 theories designed to explain behaviour in applied settings.  
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37 The papers in this special issue are ordered to reflect the translational process. These papers are  
38 summarized in Table 1, and classified as theory, basic, and applied (although note empirical papers fall  
39 along a continuum, and as such a discrete classification of basic vs. applied is a heuristic categorization  
40 rather than reflecting a meaningful dichotomous divide). The issue begins with a series of theory  
41 papers, which propose ways in which affective responses associated with neural, physiologic, or  
42 subjective states contribute to health behaviour and decision making. These theory papers set the stage  
43 for a series of use-inspired research papers, in which theory-based hypotheses are interrogated. The  
44 articles become progressively more applied and include research involving translating theories  
45 examined in use-inspired basic work to inform health behaviour change interventions. These applied  
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4 studies also offer a window into processes, where the interventions also serve as experiments that can  
5 provide further information about the phenomena that inform them. Although this special issue ends  
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7 with applied papers, the translational research process is circular. Ideally, in future theory papers and  
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9 use-inspired research, the insight gained from examining psychological processes in interventions will  
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11 be used to refine knowledge, which will then again be translated into interventions.  
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16 *Theory papers.*  
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19 All five theory papers incorporate components of different types of affective influences on  
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21 health decisions and behaviour, and often married emotion and stress perspectives or examined  
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23 important linkages between the two. The papers shed light on less traditionally examined affective  
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25 factors that facilitate health behaviour, as well as how these affective factors may interface with more  
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27 traditionally examined social and cognitive factors. In doing so, the papers develop important basic  
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29 research questions and point to directions for use-inspired research. For example, the papers develop  
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31 hypotheses about how health behaviour can be improved, either by leveraging affective concepts to  
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33 target health behaviour directly or by targeting affective processes themselves in service of improving  
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35 health behaviour through indirect routes. They also underscore measures and methodologies that  
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37 should be incorporated into both basic and applied research. Finally, they provide guidelines for  
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39 analyses that may produce mechanistic knowledge that is important for improving emotion and stress  
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41 theories as well as their translation to health behaviour change. These papers also highlight ways that  
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43 future research can use these theories to understand health disparities better, or develop tests of these  
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45 theories that better address health disparity problems.  
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52 The theoretical frameworks described in these papers are interconnected in ways, but also  
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54 distinct, and may be useful for different purposes. For example, some are most useful when  
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56 understanding healthy behaviour like physical activity (Van Cappellen et al., 2018), while others focus  
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4 on risky behaviour (O’Leary, Suri, & Gross, 2018). Some focus on physiological processes (Berkman,  
5 2018; Carpenter & Niedenthal, 2018; Van Cappellen et al., 2018), whereas others have a more  
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7 behavioural or psychological focus (Kiviniemi et al., 2018; O’Leary et al., 2018). Some articles are  
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9 more explanatory (Berkman, 2018; Carpenter & Niedenthal, 2018; O’Leary et al., 2018); other articles  
10  
11 are more focused on translation (Kiviniemi et al., 2018; Van Cappellen et al., 2018) – although all have  
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13 some utility for both explanatory and translational functions. These papers are illustrative for  
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15 informing basic and applied work, and for contextualizing the papers in the remainder of this issue.  
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21 O’Leary & colleagues (2018) develop a comprehensive model of the joint roles of emotion  
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23 regulation and coping with stress in contributing to risky health behaviour. Because behaviour such as  
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25 smoking, overeating, and drinking alcohol can be used to regulate emotion or reduce stress (see also  
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27 Adam & Epel, 2007; DeSteno, Gross, & Kubzansky, 2013; **de Rideder, Kroese, Evers, Adriaanse, &**  
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29 **Gillebarart, 2017**; Ferrer, Green, & Barrett, 2015; **Kuntsche, Kuntsche, Thrul, & Gmel, 2017**), poorly  
30  
31 managed negative affect can have deleterious consequences for health. For example, maladaptive  
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33 emotion regulatory strategies have been linked to unhealthy eating behaviour (Evers et al., 2010; Ferrer  
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35 et al., 2017; Vandewalle, Moens, & Braet, 2016; although see Adriaanse et al., 2011). **Similarly, many**  
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37 **report that smoking helps them to cope with stress, despite that research suggests quitting smoking**  
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39 **actually reduces stress (West, 2017; West & Shiffman, 2016)**. Thus, understanding emotion regulatory  
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41 and coping processes together provides a novel window into the dynamics of health behaviour as well  
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43 as unconventional or indirect methods of intervention. Synthesizing knowledge about related emotion  
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45 regulatory and coping can lead to a more comprehensive understanding of how emotions are generated  
46  
47 and regulated (see also Gross & Barrett, 2011). This is particularly important given that coping  
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49 includes broader attempts to address causes of stress (Lazarus & Folkman, 1984), allowing for a  
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51 broader conceptualization than emotion-focused strategies examined in emotion regulation (Gross &  
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4 Thompson, 2007). This framework can be used to promote both effective and healthy forms of  
5 regulation to improve health behaviours without needing to intervene on health behaviours themselves.  
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7 For example, promoting effective regulation via cognitive reappraisal or some types of problem-  
8 focused coping may lessen the need to engage in forms of emotion-focused coping that rely on risky  
9 health behaviours to downregulate negative affect.  
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16 Berkman (2018) examines health behaviours through a different lens: social and affective  
17 neuroscience. He calls for a process-focused account of health behaviours, which can generate novel  
18 predictions about why choices are made and provide insight into how to intervene upon choices. Social  
19 neuroscience models of health decision making, behaviour, and communication can account for a great  
20 deal of variance in choices, well above and beyond self-report or other traditional measures (see also  
21 Berkman, Hutcherson, Livingston, Kahn, & Inzlicht, in press; Falk et al., 2010). These models are not  
22 necessarily a replacement for traditional health behaviour choice models, but rather can complement  
23 and connect to social-cognitive frameworks and other frameworks based largely on self-report data, as  
24 outlined in this paper.  
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37 Carpenter & Niedenthal (2018) also extend traditional models of affect and health decision  
38 making by highlighting the role of biological inputs: here, physiological processes that signal decision  
39 making. Connecting traditional frameworks of emotion and decision making and affective forecasting  
40 to health (see also Ferrer, Klein, et al., 2016; Loewenstein, 2005) with work on stress and  
41 physiological processes, this framework examines how affect can influence multiattribute decisions in  
42 ways that are both beneficial and deleterious. The framework also extends to shared decision making  
43 in medical settings, connecting to work on social functions and dynamics of emotion and stress. By  
44 positing that flexible use and management of emotions across different physiological inputs influence  
45 the way that health decisions are made and are important for influencing the process itself, the  
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4 framework highlights important basic questions about how interpretation of physiological signals  
5 affects health decisions, as well as useful applications for intervention.  
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9 Van Cappellen and colleagues (2018) turn to oft-overlooked affective processes in a health  
10 context: positive affect and emotions, experienced both as consciously linked to a stimulus, and as  
11 unconscious reinforcers of enjoyable behaviours. This “Upward Spiral” framework posits that positive  
12 affect can contribute to recursive processes that support positive health behaviours. Positive affect or  
13 responses to behaviour (such as enjoyment) make behaviour more likely, and behaviours reinforced by  
14 positive affect are more likely to be maintained. Frameworks that propose mechanisms for  
15 understanding and improving behavioural maintenance are particularly useful in health behaviour  
16 change, given difficulties in promoting maintenance of health behaviours over time (Rothman, 2000).  
17 Here, like in Carpenter & Niedenthal’s (2018) framework, physiological processes play a role, where  
18 they are triggered by positive affect and health behaviours, leading to sustained changes in all three.  
19 Moreover, physiological or biological advantage such as greater cardiac vagal tone leads to more  
20 positive affective responses to activity (similar to other research where biological advantage, such as  
21 genetic predisposition, predicts affective response to exercise; Hooper, Bryan, & Hagger, 2014).  
22 Although distinct from evaluative conditioning paradigms, this framework points to ways in which  
23 evaluative-conditioning-like-processes can be leveraged in real-world settings to promote activity.  
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27 Finally, Kiviniemi et al. (2018) develop a comprehensive framework for understanding the  
28 complex associations among different types of affective processes and more traditional social-  
29 cognitive predictors of behaviour. Much previous work on emotion (and stress) and health decision  
30 making and behaviour has taken a main effects approach, examining how affect directly contributes to  
31 health decisions. Indeed, many of the theory papers in this issue take this approach, which can be  
32 useful but also may miss important nuances in the interplay among affective and cognitive predictors  
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4 of behaviour. This framework proposes that examining how affect mediates associations of traditional  
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6 social-cognitive factors and health behaviours is critical to more precise intervention development.  
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8 Moreover, moderation is important, in that health behaviour decisions are often made in affectively-  
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10 laden contexts (see DeSteno et al., 2013; Ferrer et al., 2015; Ferrer, Klein et al., 2016; Ferrer, Padgett,  
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12 & Ellis, 2016; Williams & Evans, 2014; Williams et al., 2017), and affective factors can change the  
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14 way that other decision-making determinants influence health behaviours. This paper offers a  
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16 particularly useful guide for translation, and points to the types of variables that should be included in  
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18 interventions to test basic hypotheses for back-translation (and the types of statistical designs and tests  
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20 that facilitate basic knowledge in applied contexts).  
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26 *Basic empirical papers.*  
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28 Following these theory papers, this special issue transitions to papers reporting use-inspired  
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30 basic research. These empirical papers, in line with the goals of this special issue, often marry emotion  
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32 and stress perspectives, capitalizing on synergies and divergent methodological traditions by  
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34 connecting strong theoretical and methodological traditions from each discipline. Vrinten et al. (2018)  
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36 examine how fear of cancer and general stress have independent positive associations with avoidance  
37  
38 of cancer information. By examining discrete emotion and stress concurrently but independently, the  
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40 study suggests the possibility that fear may trigger defensive processing, while general stress may be  
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42 linked to avoidance due to attenuated resources for coping with negative information. Examining  
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44 emotion and stress separately allows for the possibility to address differential determinants of cancer  
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46 information avoidance with models examining how worry or fear serves as a mechanism (Kiviniemi et  
47  
48 al., 2018) and with those examining the consequences of poorly managed stress (O’Leary et al., 2018).  
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54 Emerson, Dunsiger, & Williams (2018) examine the complex temporal associations among  
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56 exercise and positive affect using an ecological momentary assessment design and cross-lagged  
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4 analyses. They find that exercise is more likely on days when positive affect is high early in the day,  
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6 and likewise, positive affect is more likely to be experienced later in the day after exercising. This  
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8 provides direct evidence in support of a recursive model of positive affect and healthy behaviours (Van  
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10 Cappellen et al., 2018; see also Hogan et al., 2015). It also suggests the potential that a more  
11  
12 comprehensive understanding of emotion regulation and coping (O’Leary et al., 2018) may point to  
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14 ways to upregulate positive affect in service of stimulating the recursive processes uncovered in this  
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16 study.  
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21 Felder et al. (2018) examine stress and emotion in an important and relatively understudied  
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23 context: sleep behaviour. They examined the associations among rumination, emotion suppression, and  
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25 sleep among chronically stressed mothers of children with autism, and age-matched mothers of  
26  
27 neurotypical children. Interestingly, they found that among the lower-stress sample (mothers of  
28  
29 neurotypical children), rumination was associated with poorer sleep outcomes, particularly among  
30  
31 those with above average depressive symptoms. Rumination was unassociated with sleep outcomes  
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33 among the higher-stress sample (mothers of children with autism). Suppression was unassociated with  
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35 any sleep outcome, contrary to some previous work linking suppression to sleep (Vantieghem et al.,  
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37 2016), but consistent with findings that rumination emerges as a more maladaptive strategy for health  
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39 outcomes (Zawadzki, 2015). These findings are notable given theory that stress may influence how  
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41 emotion (and presumably emotion regulation) contributes to health behaviours (Carpenter &  
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43 Niedenthal, 2018), and maladaptive regulatory strategies are presumed to lead to negative outcomes  
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45 (O’Leary et al., 2018). This study is a striking example of where future work would benefit from well-  
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47 conceptualized mediation and moderation analyses promoted by Kiviniemi and colleagues (2018).  
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54 Two studies (Ellis, Rajagopal, & Kiviniemi, 2018; Kiviniemi, 2018) examine the complexity of  
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56 positive and negative affect and health decisions, providing further tests of positive affect frameworks  
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4 (Van Cappellen et al., 2018) and taking a nuanced approach that examines basic questions about types  
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6 of affective influences and their associations with social-cognitive determinants (Carpenter &  
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8 Niedenthal, 2018). Kiviniemi (2018) disentangled positive and negative affective associations with  
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10 health behaviours, as well as associations involving specific emotions versus generalized affect. He  
11  
12 found that affective associations were bidimensional, in that positive and negative affect's associations  
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14 with health behaviours were not bipolar, but rather were separate and distinct. He also found that when  
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16 examining associations of affect and health behaviours, general positive and negative affect were more  
17  
18 important in predicting intentions than were specific emotions. Ellis and colleagues (2018)  
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20 demonstrated that both affective associations and cognitive beliefs were associated with intentions,  
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22 cognitive beliefs were associated with behavioural stimuli and intentions only via affective  
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24 associations. Both studies are examples of the importance of taking a nuanced approach to  
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26 understanding how different types of affect predict health behaviours and how these relate to cognitive  
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28 predictors (Kiviniemi et al., 2018).  
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35 *Applied Empirical Papers.*

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38 Gerrard and colleagues (2018) also demonstrate the importance of moving beyond main effects  
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40 by examining mediation and moderation models to better understand the role of affect in health  
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42 behaviours (Kiviniemi et al., 2018). They examined affect, including anxiety and depression as well as  
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44 hostility and anger, as mediators of the effects of discrimination on health and health behaviours, as  
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46 well as how coping styles moderate these pathways. By allowing for the possibility that affect may  
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48 serve as a mechanism only among individuals for which specific coping styles are used, the authors  
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50 shed light on important ways to leverage theory (O'Leary et al. 2018) to attenuate negative health  
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52 consequences of discrimination.  
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5 Evans et al. (2018) offer an example of leveraging applied work to inform basic questions by  
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7 using mediation models to probe mechanisms (Kiviniemi et al., 2018). Graphic warning labels on  
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9 cigarette packages were designed (in part) to facilitate better understanding of smoking, consistent with  
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11 theory suggesting that emotion influences health risk perceptions (Carpenter & Niedenthal, 2018;  
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13 Ferrer, Klein et al., 2016; Peters, Lipkus, & Diefenbach, 2006; Slovic et al., 2015;). However,  
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15 mounting evidence shows a null effect of graphic warning labels on risk perceptions (Brewer et al.,  
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17 2016; Noar et al., 2016). Evans et al. (2017) deconstruct affective mechanisms that may explain this  
18  
19 null main effect, identifying an indirect path from graphic warning labels to risk perceptions via  
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21 affective responses. Indirect effects in the absence of direct effects can point to opposing forces in the  
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23 model (e.g., Hayes, 2009; Shrout & Bolger, 2002) (although it is worth noting that there is some  
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25 disagreement regarding the value of interpreting indirect effects; e.g., Heathers et al., 2013; Kok et al.,  
26  
27 2013; Kok & Fredrickson, 2015). Models in Evans et al. (2018) suggest the possibility that a complex  
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29 combination of forces from labels via emotional reactions, warning consideration, and smoking myth  
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31 endorsement may counteract the indirect path from warning labels to risk perceptions via emotional  
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33 reactions. This knowledge can inform basic research to identify stimuli that would increase emotional  
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35 reactions (and therefore risk perceptions) without targeting warning consideration and smoking myths.  
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42 Mahler (2018) also demonstrates the importance of examining mediation in health behaviour  
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44 interventions to shed light on mechanisms of effectiveness and develop process-focused knowledge  
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46 regarding the role of affective processes in health behaviour change (Kiviniemi et al., 2018). She found  
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48 that negative emotional reactions such as worry and embarrassment mediated the effectiveness of  
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50 social norm-based sun safety interventions. This work unpacks the role of emotion in social-cognitive  
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52 processes such as social norms, where theory has argued that these constructs incorporate affect (Ajzen  
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54 & Driver, 1991), but affective processes are rarely explicitly examined. This paper also examines how  
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4 social processes may contribute to health decision making, in accordance with theory (Carpenter &  
5 Niedenthal, 2018).  
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9 Finally, Cameron et al., (2018), Reynolds et al., (2018), and Scherer et al., (2018) all  
10 demonstrate how affective theories can be leveraged to develop efficacious interventions for health  
11 behaviours. In accordance with Van Cappellen et al. (2018), Cameron and colleagues show that  
12 inducing positive affect leads to greater engagement in physical activity. Also consistent with Van  
13 Cappellen and colleagues, Reynolds et al. (2018) demonstrate that while failing to make progress  
14 towards health goals leads to predictable negative affective responses, positive affective responses  
15 about making progress towards health goals is more motivational for facilitating health behaviour  
16 intentions. And, consistent with recommendations for examining the role of emotions in relation to risk  
17 perceptions (Carpenter & Niedenthal, 2018; Kiviniemi et al., 2018), Scherer et al (2018) demonstrate  
18 that affective evaluations, anxiety, risks, and benefits all uniquely predict medical test preference in the  
19 context of an experiment to interrogate how different types of information and recommendations  
20 influence evaluations of medical tests.  
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37 Unfortunately, none of the studies in this special issue empirically examines emotion and  
38 decision making from a social neuroscience perspective (Berkman, 2018). Future work would benefit  
39 from integrating social neuroscience into work disentangling affective influences on health decisions  
40 and behaviour. For example, social neuroscience theory and approaches may shed light on why  
41 rumination does not interfere with sleep in high stress populations (Felder et al., 2018), why specific  
42 emotions are less important than general feelings in predicting health behaviour (Kiviniemi, 2018), or  
43 what mechanisms underlie the effect of feeling good about progress on intentions to change health  
44 behaviours (Reynolds et al., 2018).  
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56 *Conclusion.*  
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5 This set of papers illustrates how health decision making and behaviour change research can  
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7 benefit from uniting perspectives from emotion and stress along the translational continuum. The  
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9 theory papers propose frameworks for understanding the role of emotion and stress in health decisions  
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11 and behaviours. These theory papers are followed by use-inspired basic papers that interrogate some of  
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13 the propositions in these frameworks. The special issue close with applied and intervention papers that  
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15 translate basic knowledge to improve health outcomes and use interventions as experiments for  
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17 understanding causal, mechanistic processes. Although these papers fall along the applied end of the  
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19 spectrum, most fall short of full translation of theory and basic research to intervention; consistent with  
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21 related compilations and recommendations, future work should integrate affective science into full-  
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23 scale interventions (Rhodes, Williams, & Conner, 2017). Moreover, although these papers are  
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25 organized along the continuum as though it were linear, it is important for future work to circle back to  
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27 the beginning of the translational continuum, back-translating mechanistic knowledge derived from  
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29 intervention studies (e.g., Cameron et al., 2018; Evans et al., 2018; Mahler et al., 2018; Reynolds et al.,  
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31 2018) to improve theories and use-inspired basic work on goal pursuit, risk perceptions, positive affect,  
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33 and social norms. This recommendation for basic-to-applied-to-basic translation is consistent with  
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35 parallel recommendations for affective science and health behaviour change (Rhodes et al., 2017), as  
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37 well as emerging recommendations for behavioural science and health research (Czajkowski et al.,  
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39 2016; Glasgow, 2008; Sussman et al., 2006; see also: <https://obssr.od.nih.gov/about-us/strategic-plan/>).  
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Table 1. Summary of Articles in Special Issue

Article	Classification*	Design	Affective processes	Behavioral context
O'Leary et al. (2018)	Theory	-	Stress, negative emotion, coping, emotion regulation	Health risk behaviours
Berkman (2018)	Theory	-	Motivation, Neuro-affective processes	Health decision making and behaviours
Carpenter & Niedenthal (2018)	Theory	-	Discrete emotion, physiological processes, affective forecasting	Health risk behaviours
Van Cappellen et al. (2018)	Theory	-	Positive affect and emotions	Health promotion behaviours
Kiviniemi et al. (2018)	Theory	-	Affective mediators and moderators	Health decision making and behaviours
Vrinten et al. (2018)	Basic	Cross-sectional population-based survey	Stress, fear	Health information seeking and avoidance
Emerson et al. (2018)	Basic	Ecological momentary assessment	Positive and negative affect	Physical activity
Felder et al. (2018)	Basic	Longitudinal survey	Stress and coping, rumination	Sleep
Kiviniemi (2018)	Basic	Cross-sectional	Positive and negative affect	Fruit and vegetable consumption, physical activity
Ellis et al. (2018)	Basic	Cross-sectional	Positive and negative affect	Sexual risk behaviour
Gerrard et al. (2018)	Applied	Longitudinal survey	Anxiety, depression, hostility, anger	Health decision making and behaviours, health problems
Evans et al. (2018)	Applied	Experimental	Affective/ emotional reactions to risk	Smoking
Mahler (2018)	Applied	Experimental	Negative emotions, worry, embarrassment	Sun safety
Cameron et al. (2018)	Applied	Cross-sectional; Experimental	Positive affect	Physical activity
Reynolds et al. (2018)	Applied	Cross-sectional; Experimental	Negative affect	Healthy eating, physical activity, alcohol consumption
Scherer et al. (2018)	Applied	Experimental	Negative affect, anxiety	Medical tests

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5 \*Because empirical papers fall along a continuum, discrete classification of basic vs. applied is a heuristic categorization rather than reflecting a  
6 meaningful dichotomous divide  
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