



Being active to stay fit ... mentally!

TOPO Summaries by the Nutrition-
Physical Activity-Weight Team

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Answers to the following questions:

- Are some physical activities more likely to improve mental health than others?
- Is having fun during physical activity necessary for positive effects upon mental health?

The TOPO collection disseminates knowledge to inform practitioners and decision makers on the promotion of healthy lifestyle habits. Each publication addresses a theme combining a critical analysis of the relevant scientific literature with observations or illustrations in order to help use this knowledge in the Québec context.

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Photo : Isabelle Doré

Mental health promotion and prevention intervention

Mental health promotion and common mental disorder prevention interventions may apply several well-recognized strategies. Noteworthy among them are strategies that foster the development of public policies and the creation of supportive environments for mental health, that strengthen community action and that support the acquisition of personal skills. These interventions can be global, focusing on several key determinants of mental health, or they can be specific, focusing on only one of these elements; they can also address the population as a whole, a specific age group, or a vulnerable sub-group. Encouraging physical activity is one mental health promotion and mental disorder prevention strategy among many others and can use the various strategies mentioned.

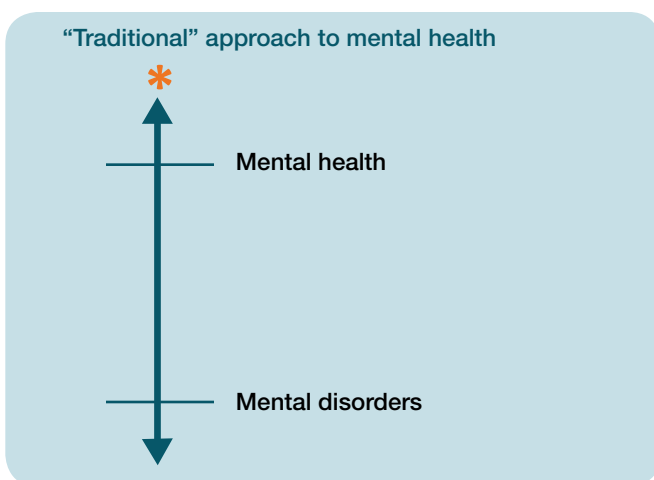
Physical activity and mental health: a new avenue for intervention?

There is a consensus within the scientific community on the virtues of physical activity for preventing cardiovascular diseases, diabetes and obesity. In addition, an increasing number of studies suggest that physical activity also has a positive impact on mental health.

There is currently an increased prevalence of common mental disorders, namely anxiety and depressive disorders, in the Canadian population, among all age groups; young people in transition to adulthood are, however, the most at-risk group for developing mental disorders. Girls and students at the secondary and post-secondary levels are at a higher risk. This situation justifies the importance and urgency of undertaking promotion and prevention initiatives before mental health problems arise.

That there is a growing interest in physical activity in the fields of mental health promotion and common mental disorder prevention is demonstrated by the many recent epidemiological studies in the area. The results of these studies may inform the development of concrete recommendations aimed at developing or adapting interventions based on physical activity.

Positive mental health: one and two-continuum models



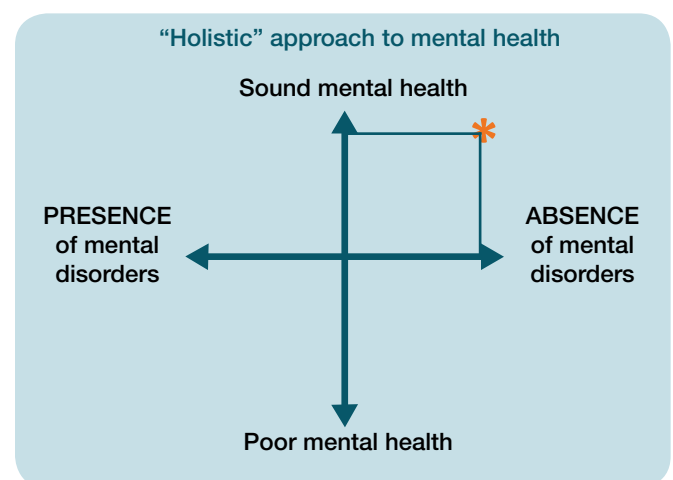
*OPTIMAL mental health

Towards a positive approach to mental health

Mental health has long been defined exclusively as the absence of mental disorders. This traditional approach originating from the field of psychiatry suggests that an individual without mental disorders is mentally healthy, and conversely, that a person with mental disorders cannot be mentally healthy. In the late 1980s, an alternative approach was proposed: viewing mental health as a continuum. This innovative and holistic approach is premised on the idea that mental health goes beyond the absence of mental disorders.

Mental health and mental disorders do not constitute opposite ends of the same continuum but are rather distinct, yet correlated axes. The first axis represents the absence or presence of mental disorders based on their level of severity, while the second one describes the level of mental health. Three main findings emerge from this holistic approach to mental health:

- 1) the absence of mental disorders does not imply optimal mental health;
- 2) the presence of mental disorders does not necessarily mean poor mental health; and
- 3) any mental health situation that is less than optimal is associated with a reduced ability to function, whether or not the person has a mental disorder.⁽²⁾



Since 2001, the definition of mental health adopted by the World Health Organization (WHO) has reflected a holistic approach: *a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.*⁽¹⁾

Effects of an optimal level of mental health...

On global health

- ↓ risk of developing anxiety or depressive disorders
- ↓ premature mortality rate
- ↓ number of chronic diseases/conditions
- ↓ use of health services

On economic, social and human development

- ↓ number of 'lost work' days
- ↓ limitations associated with daily activities
- ↑ level of psychosocial functioning

Mental health, as per its positive definition, is a fundamental health resource. It is also a collective resource, to which social institutions, living environments and people themselves contribute.³

Promoting mental health: a step towards action

From a public health perspective, it seems essential to take action before mental health problems arise and to focus not only on preventing mental disorders but also on promoting mental health in its positive dimension. While these approaches are closely linked, prevention and promotion differ from one another in terms of their action strategies. Prevention relies primarily on reducing the risk factors associated with mental disorders in groups considered to be at risk. The objective of promoting mental health, on the other hand, is to maximize and protect the mental health and well-being of a population as a whole, while examining the individual, social and structural conditions conducive to mental health.⁽³⁾ Prevention and promotion initiatives are complementary; the same intervention may act on two fronts and reduce both the prevalence and incidence of mental disorders and improve the well-being of a population or a sub-group of the population.

Promoting mental health, however, implies a new way of approaching and operationalizing mental health in its positive dimension. Consensus on a conceptual definition, as well as the adoption of a validated measure of mental health in its positive dimension, are important and necessary steps to guide research, health surveillance and development of public policies and programs that promote mental health.

The ability to measure positive mental health also means being able to evaluate the effects of interventions promoting mental health. The Mental Health Continuum (MHC) scale was proposed by Corey Keyes in 2002 to operationalize mental health in its positive dimension.⁽²⁾ This tool provides a comprehensive assessment of well-being and charts the various aspects of the concept of mental health. This scale has been translated into several languages; it has been applied in several population-based studies and surveys, including, for example, in the *Canadian Community Health Survey: Mental Health*, 2012.

Promoting mental health has the advantage of aiming for positive mental health in a population as a whole through an overall improvement in well-being. Increasing the mental health level of a population will have an effect on everyone, including those with mental disorders, and will help reduce the risk of developing this type of disorder.⁽³⁾

Measuring mental health: the Mental Health Continuum

The MHC assesses both the hedonic dimension of well-being (emotional) and the eudaimonic dimension, which covers psychological and social well-being. The first dimension refers to positive emotions towards life while the second one calls upon proper functioning as an individual and a citizen. The MHC can be used to distinguish among three levels of mental health:

- 1) the lower level, referred to as “languishing”;
- 2) the higher level, referred to as “flourishing”;
- 3) the intermediate level, characterized as being “moderately” mentally healthy, represents a combination of various aspects of well-being located between both ends.

These three levels can be observed in the presence or absence of mental disorders. The level of mental health, from languishing (not optimal) to flourishing (optimal), was identified as a dynamic concept over time; optimal mental health can therefore be expected to be attained or maintained through targeted interventions.⁽²⁾

State of knowledge: physical activity, mental health, and mental disorders

Physical activity first aroused great interest as a treatment for depression. It was shown in clinical populations that physical activity is associated with positive cognitive and psychological changes, as well as with a reduction in symptoms of depression, anxiety, and burnout.⁽⁴⁾ It has also been found that aerobic exercise could have an effect similar to that of antidepressants among elderly people suffering from a major depression.⁽⁵⁾

More recently, population-based studies have documented an inverse correlation between physical activity and depression symptoms;^(6, 7) other less numerous investigations have addressed the correlation between physical activity and anxiety.⁽⁸⁾ Some longitudinal studies suggest that physical activity has a protective effect against the onset of anxious and depressive symptoms in teenagers and adults as well as in the elderly.^(9, 10) Physical activity therefore plays a role in preventing certain common mental disorders.

In teenagers and young adults, physical activity has been identified as a protective factor against depression and suicide. It should, however, be mentioned that physical activity seems to impact the mental health of teenagers and young adults and their risk of developing mental disorders in a complex way.

As a matter of fact, it has been observed that the mental health benefits associated with physical activity, and the reduction of mental disorders within this population, are conditional upon improved self-esteem and increased social support.^(6, 11) It has also been shown that increasing the frequency and intensity of physical activity may be associated with low self-esteem and a feeling of dissatisfaction with one’s body in young people with eating disorders such as anorexia and bulimia.⁽¹²⁾ In young people transitioning into adulthood and experiencing significant times of change, transformation, and adaptation, the reasons that motivate them to be active have a major impact on their mental health and the risk of developing mental disorders.

In elderly people, moderate and regular physical activity helps delay the decline in cognitive and functional abilities, among both healthy people and those with chronic diseases.⁽¹³⁾ By remaining active, elderly people can maintain their independence and autonomy, which contributes to their psychological well-being, a better assessment of their mental health, and the maintenance of social interactions. Epidemiological studies also confirm that physical activity is associated with a lower prevalence of anxiety, depressive, and sleep disorders.

What is the optimal “amount” of physical activity for improving mental health and reducing mental disorders?

Many studies have noted a dose-response relationship, suggesting that increased benefits for mental health and decreased risks of mental disorders are observed as the amount of physical activity increases.⁽⁶⁾ However, it has been proposed that even a low level of physical activity helps prevent depression symptoms in young women. Moreover, it has been shown that overtraining may increase the risk of anxiety and depressive disorders. These findings suggest that other aspects, such as the reasons, motivations, and context in which the physical activity occurs must be taken into account when addressing mental health and mental disorders.

Is focusing on fun a promising approach?

The concept of fun and the intrinsic motivation involved in physical activity play a key role when considering the effects of physical activity on mental health and mental disorders. Intrinsic motivation refers to being physically active out of interest and for enjoyment (to have fun, to take on a challenge, to relax). Conversely, the motivations of a person practising physical activity for essentially instrumental reasons (social pressure, body image, gaining approval from someone else) are said to be extrinsic or triggered by external circumstances. And, it has been shown that physical activity is associated with positive mental health indicators only when it is linked to intrinsic motivation.⁽¹⁴⁾ Physical activity performed solely in order to lose weight or gain muscle mass (body image) is associated with an increased risk of anxiety and depressive disorders as well as low self-esteem. Further reduction of the risk of depression has also been noted in cases where physical activity is performed in a recreational context as opposed to physical activity performed in other contexts (transportation, work, or household chores).⁽¹⁵⁾

The concept of fun and the presence of a recreational context seem to be essential elements of physical activity from the perspective of promoting mental health and preventing common mental disorders.

Is being active as a group an added value?

Recent studies have examined the impact of the context of physical activity (alone, in a group, or on a sports team) on mental health and mental disorders; they maintain that the social context of the physical activity may be a key factor in explaining the relationship between exercising and mental health and mental disorders. It has been found that being part of a sports team has a protective effect against the feeling of despair and the risk of suicide in teenagers.⁽¹¹⁾ A Montréal study⁽¹⁶⁾ has shown that participating in team sports is inversely correlated with the probability of depression in young adults, when they are involved in moderate to vigorous physical activities.

Physical activity performed in somewhat formal groups may also positively impact well-being, reduce the risk of developing mental disorders, and help overcome isolation, especially in elderly people. These types of activities may include yoga classes, aqua fitness classes, training with a group of runners or cyclists on a somewhat regular basis, etc. While little research has addressed this topic until now, this type of group physical activity may have beneficial effects on well-being and mental disorders similar to those of being a member of a sports team. For example, beneficial effects on mental health, isolation, and the risk of depression have been reported in elderly people participating in walking groups.⁽¹⁷⁾

Mechanisms involved in the relationship between physical activity and mental health and mental disorders

Several mechanisms to explain the relationship between physical activity and mental health and mental disorders are proposed in literature. These mechanisms fall into three categories: biological, psychological, and social mechanisms.

Various **biological mechanisms** have been identified, especially through the action of neurotransmitters. Clinical studies have shown that exercising stimulates the secretion of monoamines and endorphins, respectively known for their antidepressant and analgesic effects.⁽¹⁸⁾ Monoamines, including serotonin, are known for their antidepressant effect and their mood-regulating function. The secretion of endorphins resulting from physical activity helps reduce pain, create a euphoric sensation, and consequently,

Recreational physical activities, especially those performed as a group, are interventions with a strong potential for improving mental health, preventing mental disorders, and reducing their symptoms.

reduce stress-related adverse effects. We also know that physical activity causes the body temperature to rise and fosters better blood circulation in the brain; these effects have a direct impact on hormonal regulation by reducing physiological reactivity to stress.⁽¹⁸⁾ Because it is known that stress is a risk factor for the onset of psychiatric disorders, especially anxiety and depressive disorders, it can be concluded that physical activity affects mental disorders through neurological and physiological mechanisms. While certain physiological mechanisms appear to play a significant role in the correlation between physical activity and mental disorders, other mechanisms may also play a role in reducing the risk of developing this type of disorder.

It has been found that physical activity contributes to maintaining and improving mental health and to reducing the risk of mental disorders by impacting **psychological factors** by, for example, enhancing a person's self-esteem, sense of self-efficacy, and self-control.^(6, 12) Physical activity may also cause an interruption of negative thoughts associated with stress, depression, and anxiety.

In terms of **social mechanisms**, it has been shown that physical activity in a group helps strengthen social support and social integration, which may positively affect mental health and may also explain the reduction of the risk of developing mental disorders.^(11, 19) The impact on social support can be explained by the increased level of social interaction in group physical activities, which contributes to strengthening the social network, which in turn helps improve the amount and quality of social support available to the person. It is acknowledged that a wide and diversified social network provides individuals with the necessary means and resources to cope with adversity and effectively manage stress and everyday life events, thus contributing positively to their mental health.⁽²⁰⁾ Individuals who benefit from a high level of social support show higher levels of resiliency, less despair, and a reduced risk of suicide. Physical activity within a sports club or team may also contribute to the social integration of individuals, especially through the development of a sense of belonging to the group. Individuals who are part of a group are more protected from psychological and emotional imbalances. Sports clubs act as "social catalysts" by stimulating social interactions, which strengthens the sense of belonging and attachment to the group. Group physical activities, through social integration, have been found to have positive effects on mental health and the reduction of the risk of mental disorders in the case of not only moderate- and high-intensity activities, but also for low-intensity activities.

Avenues for intervention

Physical activity seems very promising because it requires very few resources, even though this is admittedly not the case for all physical activities. It has a strong potential to be accepted and understood by individuals as a way to promote physical and mental health. There are already numerous interventions along this vein in school environments, work settings, and the community that use physical activity as a way to promote health and healthy lifestyle habits. These same interventions may also very well help boost mental health and prevent common mental disorders if they are adapted at least minimally to take into account the methods identified as more likely to positively impact well-being.

Recommendations on physical activity to optimize mental health benefits and reduce mental disorders

These recommendations, inspired by the work of NICE,¹ may enable the development, adaptation, and/or enhancement of public health interventions that rely on physical activity to promote mental health and prevent common mental disorders. The principle shared by these avenues for action is to create and maintain environments that allow physical activity under conditions that are conducive to mental health.

- Offer workers, groups with an increased risk of developing mental disorders, and the general public educational sessions on the role played by physical activity in not only physical but also mental health;
- Promote motivating factors and health-based reasons to be physically active, such as a desire to be healthy and to become more physically fit.
- Focus on a context that is conducive to and supportive of relaxation and fun.
- Promote physical activity in a social context, with colleagues, friends, family members, and even in a club or sports team.

¹ National Institute for Health and Clinical Excellence, a non-departmental organization under the jurisdiction of the United Kingdom Government. Its recommendations were inspired by *Public Health Interventions to Promote Positive Mental Health and Prevent Mental Health Disorders Among Adults*. Evidence Briefing, London, National Institute for Health and Clinical Excellence, 2007.

- Enhance municipal sports facilities (parks, sports fields) and local sports programming.
- Locally develop strategies and programs that prioritize the strengthening of the social aspects of recreational physical activity (walking groups, hiking clubs, sports leagues, etc.)
- Take into consideration the specific preferences and capabilities of the targeted population (children, teenagers, elderly people) when developing programs or interventions.
- Develop infrastructure that fosters physical activity in a pleasant and safe context in school settings, at work, and within the community (exercise room, gymnasium, park, bike trail, walking path, public pool, etc.).

Conclusion

The development of interventions and programs that rely on physical activity to promote mental health and prevent common mental disorders must take into account the main findings and recommendations that are in the literature. It seems essential to prioritize the development of a culture of active recreation in which fun or enjoyment is a key component and to foster physical activity in a social context. Being more active ... but more importantly, doing so with others and with pleasure!

Sport used as a psychosocial development tool

Various Québec organizations prioritize sports as a psychosocial development tool. These organizations propose sports activities and challenges, in particular for teenagers and young people, to help them overcome difficulties such as a lack of self-confidence, a search for identity and autonomy, dropping out of school, and isolation that can accompany transitioning into adulthood.

For example, the organization DesÉquilibres has developed a training program and a practical guide on physical activity that focuses on social diversity and developing physical, psychological, and social skills. The guide offers various tools enabling workers to introduce physical activities of a psychosocial nature to assist young men and women aged 16 to 21 in their psychosocial growth.



Photo : DesÉquilibres

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Being active to stay fit ... mentally!

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