

Kinesiology and Multidisciplinary Teams

The Business Case

OKA's Recommendation

Integrate Kinesiologists into multidisciplinary teams to:

- **help relieve the case burden on other primary care team members,**
- **increase caseload throughput of the team, and**
- **bring the health benefits of exercise to chronic disease management, some of the most common patient visits every year.**

About Registered Kinesiologists and Kinesiology

The *Kinesiology Act* defines Kinesiologists' scope of practice:

The practice of kinesiology is the assessment of human movement and performance and its rehabilitation and management to maintain, rehabilitate or enhance movement and performance.

Kinesiologists are regulated health professionals, with standards of practice governed by the College of Kinesiologists of Ontario. They are Ontario's healthcare experts focused on exercise and human movement.

According to the Public Health Agency of Canada, exercise can help manage and prevent more than 25 physical and mental chronic conditions, including:

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|-------------------------------------|----------------------------|-----------------------------------|
| • Stress and anxiety | • Cystic fibrosis | • Metabolic syndrome |
| • Depression | • COPS | • Low back pain |
| • Schizophrenia | • Osteoarthritis | • Parkinson's disease |
| • Colon, prostate and breast cancer | • Arthritis | • Multiple sclerosis |
| • Types 1 and 2 diabetes | • Osteoporosis | • Obesity/BMI |
| • Chronic pain | • Coronary heart disease | • Musculoskeletal disorders |
| • Concussions | • Heart failure and stroke | • Injuries (incl. auto accidents) |
| • Asthma | • Hypertension | |

Integrating Kinesiology into Primary Care

The Statistical Basis for Kinesiology

A case study of the Kinesiology program at the Guelph Family Health Team, which employs three Kinesiologists, illustrates how Kinesiologists can translate their skills into significant returns for the Ontario health system.

In fiscal year 2018-19, Kinesiologists saw 308 distinct patients for a total of 3,520 appointments.

The reasons for patient visits are demonstrated in Table 1.

Most visits to a Kinesiologist involve group classes or follow-up visits. In fact, less than 10% of visits were for the purpose of initial assessments. Kinesiologists spent most of their time making recurring contact with patients, delivering exercise programming and helping patients continue and adjust their treatment programs.

TABLE 1: Kinesiologist Encounters @ Guelph FHT		
Encounter Type	Visits	Patients
<i>Group classes</i>	1,462	82
<i>Follow-up in clinic</i>	761	229
<i>Exercise</i>	731	67
<i>Follow-up, unspecified</i>	208	33
<i>Initial assessment</i>	197	167
<i>Follow-up by phone/fax/email</i>	126	52
<i>Peer support groups</i>	35	10

TABLE 2: Average Medical Salaries in Ontario	
Professional	Salary
Medical doctor	\$234,109 ¹
Nurse Practitioner	\$145,250 ²
Registered Nurse	\$111,700 ³
Physiotherapist	\$89,161 ⁴
Dietitian	\$79,404 ⁵
Social Worker	\$78,913 ⁶
Kinesiologist	\$74,148

Kinesiologists are the most cost-effective health care professionals typically found at a Family Health Team (see table 2). The annual salary for a Kinesiologist compares favourably with those of allied health professionals such as social workers and dietitians, while being substantially

¹ Canada Job Bank estimate. <https://www.jobbank.gc.ca/marketreport/wages-occupation/24432/ca>

² Incredible Health. <https://www.incrediblehealth.com/salaries/np/ca/ontario>

³ Incredible Health. <https://www.incrediblehealth.com/salaries/rn/ca/ontario>

⁴ Talent.com estimate. <https://ca.talent.com/salary?job=physiotherapist>

⁵ Talent.com estimate. <https://ca.talent.com/salary?job=registered+dietitian>

⁶ Talent.com estimate. <https://ca.talent.com/salary?job=social+worker>

more economical than the salary ranges for physiotherapists. By assigning follow-up appointments to a Kinesiologist, primary care providers can cost-effectively free up time to see patients with pressing needs, while allowing follow-up work to be handled by a professional with specific knowledge related to clinical exercise programming – knowledge that primary care practitioners often lack.

Table 3 illustrates the types of conditions physicians referred patients to a Kinesiologist to treat. Table 4 further breaks down the Chronic Disease Management Category to illustrate the types of conditions physicians referred to a Kinesiologist.⁷

The conditions Kinesiologists deliver service to include some of the most common chronic conditions in Ontario. Approximately 63% of Ontarians have one or more chronic diseases. Of the conditions in Table 4: Roughly 25.8% of adults in Ontario are obese⁸, while diabetes and prediabetes affect roughly 30% of Ontarians. Musculoskeletal conditions account for roughly 40% of workers' compensation claims, and back problems are associated with enormous work productivity loss, costing Canada \$621 million per year.

TABLE 3: Conditions Referred For	
Condition	%
Musculoskeletal pain	45%
Back pain	36%
Acute musculoskeletal injury	29%
Chronic disease management	23%
Headache	12%

TABLE 4: Chronic Diseases Referred For	
Condition	%
Chronic musculoskeletal	90%
Weight management	60%
Cardiovascular	45%
Type 2 diabetes	40%
Cancer	5%
Concussions	5%

Kinesiology is a cost-effective way to care for these common conditions while alleviating the human resources burden on primary care professionals.

Kinesiology and Economical Doctor-Patient Time

Kinesiologists can play an important part in helping primary care physicians maximize their time with a patient, without compromising quality of care. As part of a multidisciplinary team, they can help deliver the physical activity side of health care and allow first-line providers to focus on their core scope.

Research into Ontario physicians and nurse practitioners⁹ found that, while uptake of exercise guidelines would improve health and reduce mortality, physicians face barriers to implementing these guidelines. These challenges include:

⁷ Auger, Leslie et al. *Healthcare professionals' insights on the integration of Kinesiologists into Ontario's health system*. Translational Journal of the ACSM, Vol. 8, No. 4 (2023).

⁸ Public Health Ontario. *Ontario Health Profile: Obesity – A Burden Across the Life Course*.

⁹ R.E. Clark et al. "I do not have time. Is there a handout I can use?": combining physicians' needs and behavior change theory to put physical activity evidence into practice. *Osteoporosis International*, Vol. 28, Issue 6. 2017.

- Competing demands for time with a patient;
- Lack of tools and incentives;
- Limitations in knowledge (e.g. where to refer, what to say)

In many cases, physicians and nurse practitioners may lack knowledge on basic exercise concepts, such as how to advise someone with osteoporosis on how to move safely in daily life.

Kinesiologists can supplement not only primary care physicians, but other specialists with focus on chronic disease. For instance, at least 50% of diabetes can be prevented through structured lifestyle interventions focused on diet and exercise.¹⁰ Yet many diabetes educators report that they feel ill-equipped to counsel patients on exercise.¹¹

Kinesiology and Overcoming Barriers to Exercise

Alongside clinical and scope-of-practice advantages, adding Kinesiologists to a multidisciplinary team can help reduce barriers that prevent clients from exercising in the first place.

The benefits of exercise are well-understood, not only for patients with multiple morbidities but for just about anyone. However, challenges arise when exercising with chronic conditions. Particularly for patients with mental health disorders, sticking with an exercise program is challenging. Lack of access to services and constraints in ability to pay are major barriers to accessing exercise for many patients.¹² For middle-aged people in particular, many will seek out gyms as venues for exercise; the cost of organized activities or gyms, however, are barriers to access.¹³ Further, venues like gyms are not appropriate for patients who may need to tailor their activities around the presence of chronic disease.

Simply, for patients to stick with exercise, especially when managing chronic conditions, there is a need for **affordable, accessible coaching**.

Adding a Kinesiologist to a multidisciplinary team facilitates access to exercise-based care. In a team-based model, a patient can come in and see the primary care physician, get a referral and go down the hall to the kinesiologist, who can then schedule them to come back in whenever needed.

¹⁰ Colagiuri R, Girgis S, Gomez M, Walker K, Colagiuri S, O'Dea K. (Menzies Centre for Health Policy, University of Sydney). *Evidence based guideline for the primary prevention of type 2 diabetes*. Sydnnet (AUS): 2009. 213 p.

¹¹ Dillman CJ, Shields CA, Fowles JR, Perry A, Murphy RJL, Dunbar P. *Including Physical Activity Exercise in Diabetes Management: Diabetes Educators' Perceptions of Their Own Abilities the Abilities of Their Patients*. Can J Diabetes 2010;34:218–26.

¹² Machaczek, Katarzyna Karolina et al. *A scoping study of interventions to increase the uptake of physical activity (PA) amongst individuals with mild-to-moderate depression (MMD)*. BMC Public Health, 18, no. 382 (2018). 21 March 2018.

¹³ Kelly, Sarah et al. *Barriers and facilitators to the uptake and maintenance of healthy behaviours by people at mid-life: A rapid systematic review*. PLOS ONE. 27 Jan 2016.

Through models such as Family Health Teams, the barrier of up-front cost can be overcome, and direction can be tailored specifically to the client's medical needs.

The types of therapies offered by Kinesiologists can prevent patients from returning to primary care professionals with otherwise manageable conditions. A British study found that, among patients with low back pain, those who received general practitioner guidance alone spent 62.7% more on doctors' visits, 76.7% more on physiotherapy and 30% more in overall health services than those who underwent exercise therapy guided by a professional. The physician-only group also took 46% more sick days than the exercise group. Exercise both reduced the need to visit primary care providers and resulted in less overall strain on the health system.¹⁴ This preventative principle can carry through to other chronic conditions.

In a recent Ontario study, of the one-third of client-facing healthcare professionals currently working with a Kinesiologist, 87% report being satisfied or extremely satisfied.¹⁵

Overall, Kinesiologists in Ontario...

- **...are more cost-effective than other medical professionals**
- **...treat many of Ontario's most common chronic conditions**
- **...can handle large volumes of mostly follow-up appointments**
- **...use a preventative approach which averts future primary care visits**

The preventative, customized approach of Kinesiologists makes them cost-effective at easing the health human resources burden on primary care providers.

Case Study

The patient in this case study was a 35-year-old man with a heart condition. He was diagnosed with developing idiopathic cardiomyopathy, which makes it difficult to pump blood through the body. The condition caused this father with a young family to experience shortness of breath and low oxygen saturation levels. This made it difficult for him to carry out daily living activities and care for his children. The man was referred to a Kinesiologist for treatment.

The Kinesiologist had 15 years of experience as a cardiovascular physiologist. They began by conducting a full cardiac workup, including a stress test and an ECG, and identified the patient's exercise limitations. As part of this exercise, a heart rate range was established to set up a structured intensity for an exercise program. The Kinesiologist developed a treatment plan based on the patient's goals and abilities.

¹⁴ Klaber Moffett, Jennifer et al. *Randomised controlled trial of exercise for low back pain: Clinical outcomes, costs and preferences*. British Medical Journal, Vol. 319, 31 Jul 2019. 279-283.

¹⁵ Auger et al.

The treatment plan was designed to preserve heart function and delay the need for assistive devices or heart transplants. The plan was designed to improve quality of life and allow the patient to interact comfortably with his family. It included a Kinesiologist-supervised exercise program, regular walking, breathing exercises and changed nutrition habits, with day-to-day adjustments based on discussion between the Kinesiologist and patient. The Kinesiologist established small goals towards the patient's main goal: Walking a 400-metre track nonstop, without running out of breath.

The treatment plan was so successful that not only was the patient able to walk the track, he was able to return to work full-time. The patient's mental health and quality of life improved. With recovery, his self-confidence and self-esteem increased, making it easier for him to continue to improve his health.