

Department of Kinesiology & Physical Education – McGill University

EDKP 446 - Physical Activity and Ageing - Fall 2021 (3 credits)

Course Prerequisite: EDKP 395 Exercise Physiology

Course Schedule: Tuesday and Thursday, 1:05 – 2:25 pm, Education Building 216

Instructor Information:

Name and title: Jenna C. Gibbs, Ph.D.

Office location: Currie Gym Office A208

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Office hours: Contact instructor by email for appointment

Teaching Assistant (TA) Information:

Name and Title: Jennifer Levee, B.Sc.

E-mail: jennifer.levee@mail.mcgill.ca

Office hours: Contact TA by email for appointment

Course Overview: This course is designed to provide a review of age-related changes in cardiopulmonary, musculoskeletal, metabolic, and nervous systems as they relate to functional limitations and the physiological responses to acute and chronic exercise. The course will examine age-related diseases, such as cardiovascular disease, sarcopenia, osteoporosis, arthritis, and type 2 diabetes and describe the role of regular exercise and physical activity in mitigating the aging process.

Instructor Message Regarding Course Delivery: This course will primarily use an in-person teaching format and will require on-campus presence for learning activities. However, please note that these plans are subject to change based on public health protocols and will consider using online course components as needed. This learning context presents new challenges for all involved, and student engagement is of particular concern. I have designed this course to consider the challenges that students may experience due to the pandemic and I am committed to providing a supportive learning environment. Please visit the following links related to the delivery of this course: [Guidelines for Students on Teaching, Learning, and Assessment and Learning Resources](#). All requests for technical support should be directed to 514-398-3398 or itsupport@mcgill.ca. Finally, the context of attending university during a pandemic may bring on additional stress and impact your wellbeing. Please do not hesitate to reach out for support if necessary, and access the many resources available, including, for example, [Student Services](#), the [Office of the Dean of Students](#), and your Faculty's Student Affairs Office.

Learning Outcomes: By the end of this course, students will be able to:

1. Describe the fundamental physiological concepts and theories related to the aging process.
2. Understand the effects of physical activity and exercise on the major physiological systems and on the aging process.
3. Explain the interaction between aging, age-related disease, and physical activity.
4. Define, apply, and evaluate the principles of exercise training and prescription for health, fitness, and physical functioning in older adult populations.

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5. Critically appraise the published scientific literature related to physical activity and aging, including identifying research questions and hypotheses, evaluating methodology, interpreting primary research data, and communicating logical conclusions from experimental results.
6. Design, present, and write a report on an exercise program to promote healthy aging and prevent and manage age-related disease.

Instructional Methods: Two in-person class sessions per week (unless otherwise notified – *see Course Schedule*). Course activities will vary to include: lectures, pre-recorded presentation videos, guest lectures, group discussions about assigned readings, oral presentations, hands-on workshops, and case studies.

Expectations for Student Participation: Students are expected to use myCourses to participate in this course on a regular basis (the use of online course components, including Zoom, will be considered as needed). Please find relevant instructions and tutorials for these technologies at McGill's [Learning Resources](#). Participation will be assessed through your active involvement in the group discussions about the assigned readings, question and answer sessions with the guest speakers, and by attending the group presentations of your peers and asking questions following the presentations. Students are expected to prepare for these sessions by reviewing the assigned readings, lecture notes, and pre-recorded presentation videos before the class sessions. For students unable to attend these in-person class sessions, you can still engage in the course by reviewing the lecture notes and assigned readings on myCourses and participating in the myCourses discussion forums as directed.

Required Course Materials:

- a) Course notes on myCourses
- b) Assigned readings from the scientific literature on myCourses
- c) Additional readings, videos, and resources on myCourses
- d) Device for accessing myCourses and Zoom (computer, tablet, smartphone) with optional use of a webcam and microphone

Optional Course Materials:

- a) Optional textbook: Danielle R. Bouchard. Exercise and Physical Activity for Older Adults. Human Kinetics, Champaign, IL, USA, 2020

Intellectual Property Considerations: I remind everyone of their responsibility in ensuring that the course-related lecture, video, and associated materials are not reproduced or placed in the public domain. This means that each of you can use it for your educational purposes, but you cannot allow others to use it by putting it up on the Internet or by giving it or selling it to others who may also copy it and make it available. Thank you for your cooperation.

Course Content:

Course topics are listed on the course schedule. Course materials will be available on myCourses the day prior to the class sessions for which they will be presented. In certain instances, students will be expected to review pre-recorded presentation videos and mandatory assigned readings, participate in group discussions, and submit questions for classmates and guest speakers prior to classes and will be reminded of these instances at least one week in advance (*see Course Schedule*). Students are encouraged to review the course notes, pre-recorded presentation videos,

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and assigned readings to help prepare for exams and assignments, clarify content, and reinforce their understanding.

Course Evaluation:

Name of Assignment	Due Date	% of Final Grade
Journal Club Presentation	<i>See Course Schedule and myCourses.</i>	15%
Mid-term Exam	Tues. October 19 (In-class)	35%
Participation	Ongoing throughout semester	5%
Group Assignment (Part 1): Oral Presentation	November 9 & 11 (In-class)	20%
Group Assignment (Part 2): Written Report	Thurs. November 25 (myCourses)	25%

Note: In the event of extraordinary circumstances beyond the University's control, the course content and/or evaluation scheme is subject to change.

University Grading Scale

<u>Letter Grades</u>	<u>Percentages</u>
A	85-100
A-	80-84
B+	75-79
B	70-74
B-	65-69
C+	60-64
C	55-59
D	50-54
F (fail)	0-49

Group Journal Club Presentation: Students will prepare one journal club presentation based on a scientific article (mandatory assigned readings will be selected by the course instructor), which will be worth 15% of their final grade. Students will work in small groups of 3-4 and will orally present their summary and critique of the article in-class and subsequently answer questions from their instructor and classmates (details on the specific format to be posted on myCourses). The journal club presentation slides must be submitted on myCourses the day before the designated class session (*see Course Schedule*). Non-presenting students should come to the class session prepared to discuss the readings with other students, which will contribute toward their final participation grade (i.e., the journal club presentation related to "Sarcopenia and Frailty" will involve a group discussion on Tuesday October 5 and therefore the associated readings should be reviewed prior to class). A list of the assigned readings for each journal club will be posted within the first week of the semester. Each group journal club presentation will be graded on: the content and quality of the research article presentation, their critical evaluation of the article, and their preparedness for and ability to answer questions. The purpose of these group discussions is to enhance engagement, discuss scientific articles with other students, develop critical appraisal skills, and reinforce understanding of the course content.

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Mid-term Exam: One mid-term exam will take place approximately half-way through the semester. The exam will be administered in-person during class time (unless otherwise notified) and will be worth 35% of the final grade. The exam will be a combination of multiple-choice, true/false, fill-in-the blank, and short-answer questions and should take no longer than 80 minutes to complete. The exam will include information from the course notes, pre-recorded presentation videos, assigned readings, journal club presentations, and guest speaker lectures. Attendance is mandatory at the mid-term exam. The date and time of the exam is provided in this course outline (*see Course Schedule*) and will be posted on myCourses. The course instructor will be available during the designated class time in the event of questions. Special accommodation may be granted by the instructor in exceptional circumstances which include illness, participation in athletic/academic events (varsity, national, international), domestic affliction, and religious conviction. It is the student's responsibility to supply proper documentation and/or notification at least two weeks prior to the originally scheduled exam to support their circumstance. In cases of unforeseen illness, the student is expected to contact the instructor no later than the day of the exam. Personal travel plans and arrangements are not valid reasons for requesting a special accommodation for an exam. Failure to comply with this policy will result in a grade of zero for the exam.

Participation: Students will be evaluated for participation throughout the course, which will be worth 5% of the final grade. The participation grade will include: i) class attendance at group presentations by your peers (including journal club presentations), guest lectures, and special in-class workshops, and ii) preparedness for and participation in discussions about assigned readings following journal clubs. For students unable to attend one of these mandatory class sessions due to a documented reason, you can still participate through the myCourses discussion forum as directed. Students are permitted to miss up to two of these mandatory class sessions without penalty. The purpose of active participation in the course is to enhance engagement, discuss content with other students, and reinforce understanding.

Group Final Assignment (Part 1) – Presentation of an Exercise Program: The first part of the course final assignment will be a group presentation (worth 20% of the final grade) describing an exercise program to promote healthy aging and prevent/manage age-related disease. The exercise program will be presented by groups of 3-4 students in the form of an oral presentation using powerpoint slides. The group oral presentations will be given in-person during class time on November 9 and 11 (*see Course Schedule*). The presentation slides must be submitted on myCourses the day before your presentation by 11:59 pm (eastern time). Special accommodation may be granted by the instructor if the previously mentioned exceptional circumstances apply to 1 or more group members and the group will be expected to provide proper documentation and notification at least 1 month prior to the assignment due date.

Group Final Assignment (Part 2) – Written Report on an Exercise Program: The second part of the course final assignment will be a written report (worth 25% of the final grade) describing the exercise program presented in part 1 of the assignment in greater detail. Students will work in the same groups as in part 1 of the assignment. Students are permitted and expected to refer to information from the course notes, pre-recorded presentation videos, assigned readings, group discussions, and guest speaker lectures. Students are also encouraged to modify their exercise programs based on feedback from their instructor and classmates following the group presentations to improve the quality of their programs prior to the final submission. Similar

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to part 1 of the assignment, special accommodation may be granted by the instructor for the previously mentioned exceptional circumstances with proper documentation to support their circumstance. The final written report must be submitted on myCourses by November 25 at 11:59 pm (eastern time). Late assignments can be handed in on myCourses, and the date and time at which the assignment was submitted will be recorded. Late assignments will be penalized 10% for each day or part of a day that they are late.

Student Assessment Policy: The [University Student Assessment Policy](#) exists to ensure fair and equitable academic assessment for all students and to protect students from excessive workloads. All students are encouraged to review this Policy, which addresses multiple aspects and methods of student assessment (e.g. timing of evaluation due dates and weighting of final examinations).

Course Communication: Students requiring assistance are encouraged to email any course-related questions to their instructor. While email is commonly used by students to communicate with their instructor, it does limit the effectiveness and efficiency of the communications and may not be the best way for the instructor to answer student questions, especially those requiring an explanation of course concepts or personal concerns. The instructor will remain available for a short period after the end of the class session to answer questions about the lecture. Should you wish to meet with the instructor or TA outside of the class time, please email them to make an appointment to be held in-person or remotely if preferred. If a remote appointment is preferred, students will have the option to access the appointment via a Zoom link and passcode or call in by phone. To protect your privacy, the instructor will only reply to you at your official McGill email address. Please be sure to check your McGill email account on a regular basis.

McGill University Policy on Academic Conduct: McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under [Code of Student Conduct and Disciplinary Procedures](#) (Approved by Senate on 29 January 2003) (See McGill's guide to academic honesty for more information). L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le [guide pour l'honnêteté académique de McGill](#)). Additional policies governing academic issues which affect students can be found in the [Charter of Students' Rights](#).

Health and Safety Guidelines: Please note that the format for the delivery of this course is unusual and must respect the guidelines of health and safety ([Health Guidelines for Students](#)). It is explained by our current extraordinary circumstances, and aims to allow you, as students, to complete this term with the requisite knowledge for this course, and to succeed in your assessments. I ask for everyone's collaboration and cooperation in ensuring that these guidelines are respected. On August 6, the Government of Quebec announced the [government directives](#) for the start of the Fall term, including wearing procedural masks at all times in the classroom. Based on this announcement and our previous planning, McGill developed directives, which are detailed on the University's [Coronavirus website](#). Please note that latest version of McGill's protocols as they relate to this course will be posted on myCourses and may change at any time following new directives from the government or the university.

Language of Submission: In accordance with McGill University's [Charter of Students' Rights](#), students in this course have the right to submit in English or in French any written work that is to be graded. This does not apply to courses in which acquiring proficiency in a language is one of the objectives. Conformément à la [la Charte des droits de l'étudiant](#) de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté, sauf dans le cas des cours dont l'un des objets est la maîtrise d'une langue.

Copyright Policy for Course Materials: Instructor generated course materials (e.g., lecture notes, recordings, exam questions, videos etc.) are protected by law and may not be copied or distributed in any form or in any medium without explicit permission of the instructor. Note that infringements of [copyright](#) can be subject to follow up by the University under the Code of Student Conduct and Disciplinary Procedures.

Special Circumstances: As the instructor of this course, I endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me and the [Office for Students with Disabilities](#), 514-398-6009.

End-of-Course Evaluations: [End-of-course evaluations](#) are one of the ways that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You will be notified by email when the evaluations are available. Please note that a minimum number of responses must be received for results to be available to students.

Land Acknowledgement: McGill University is on land which has long served as a site of meeting and exchange amongst Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. We acknowledge and thank the diverse Indigenous people whose footsteps have marked this territory on which peoples of the world now gather. L'Université McGill est sur un emplacement qui a longtemps servi de lieu de rencontre et d'échange entre les peuples autochtones, y compris les nations Haudenosaunee et Anishinabeg. Nous reconnaissons et remercions les divers peuples autochtones dont les pas ont marqué ce territoire sur lequel les peuples du monde entier se réunissent maintenant.

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Course Schedule: This course schedule, along with course materials and assignment due dates, are subject to change. It is the student's responsibility to check myCourses for schedule updates. Any course changes will be clearly noted in the course announcements or by McGill email.

Week	Date	Class Session Description	Course Materials	Assignments Due
1	Thurs. Sept. 2	Introduction to Physical Activity & Aging	<ul style="list-style-type: none"> Review course outline and lecture notes on myCourses before class 	None
2	Tues. Sept. 7	Aging Processes, Theories & Trends	<ul style="list-style-type: none"> Review lecture notes and journal club assignment instructions on myCourses before class 	None
	Thurs. Sept. 9	Exercise Program Design for Older Adults	<ul style="list-style-type: none"> Review lecture notes and group assignment part 1 instructions on myCourses before class 	None
3	Tues. Sept. 14	Age-Related Cardiopulmonary Changes	<ul style="list-style-type: none"> Review lecture notes before class 	None
	Thurs. Sept. 16	Cardiopulmonary Adaptations to Training	<ul style="list-style-type: none"> Review lecture notes before class 	None
4	Tues. Sept. 21	Cardiovascular Disease & Exercise <ul style="list-style-type: none"> <i>Journal Club Presentation #1*</i> 	<ul style="list-style-type: none"> Review lecture notes before class Be prepared to discuss assigned readings 	<u>Journal Club Presentation (Group #1) Due</u>
	Thurs. Sept. 23	Age-Related Muscle Changes	<ul style="list-style-type: none"> Review lecture notes before class 	None
5	Tues. Sept. 28	Skeletal Muscle Adaptations to Training	<ul style="list-style-type: none"> Review lecture notes before class 	None
	Thurs. Sept. 30	Protein Metabolism & Aging <ul style="list-style-type: none"> <i>Guest Lecture: Prof. Churchward-Venne</i> 	<ul style="list-style-type: none"> Review lecture notes before class 	None
6	Tues. Oct. 5	Sarcopenia & Frailty <ul style="list-style-type: none"> <i>Journal Club Presentation #2*</i> 	<ul style="list-style-type: none"> Review lecture notes before class Be prepared to discuss assigned readings 	<u>Journal Club Presentation (Group #2) Due</u>
	Thurs. Oct. 7	Age-Related Bone Changes	<ul style="list-style-type: none"> Review lecture notes & group assignment part 2 instructions before class 	None
7	Oct. 13 & 14	FALL BREAK – NO CLASS	None	None
	Fri. Oct. 15	Bone Adaptations to Physical Activity & Nutrition	<ul style="list-style-type: none"> Review lecture notes before class 	None

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8	Tues. Oct. 19	MID-TERM EXAM (IN-CLASS)	None	None
	Thurs. Oct. 21	Osteoporosis & Exercise • <i>Journal Club Presentation #3*</i>	<ul style="list-style-type: none"> Review lecture notes before class Be prepared to discuss assigned readings 	<u>Journal Club Presentation (Group #3) Due</u>
9	Tues. Oct. 26	Aerobic Training in Older Adults	<ul style="list-style-type: none"> Review lecture notes before class 	None
	Thurs. Oct. 28	Strength & Flexibility Training in Older Adults	<ul style="list-style-type: none"> Review lecture notes before class 	None
10	Tues. Nov. 2	Falls Prevention • <i>Journal Club Presentation #4*</i>	<ul style="list-style-type: none"> Review lecture notes before class Be prepared to discuss assigned readings 	<u>Journal Club Presentation (Group #4) Due</u>
	Thurs. Nov. 4	Physical Function in Older Adults	<ul style="list-style-type: none"> Review lecture notes before class 	None
11	Nov. 9 & 11	GROUP PRESENTATION DAYS 1 & 2*	None	<u>Group Presentations Due In-Class</u>
12	Tues. Nov. 16	Balance Control & Aging • <i>Guest Lecture: Prof. Caroline Paquette</i>	<ul style="list-style-type: none"> Review lecture notes before class 	None
	Thurs. Nov. 18	Balance & Mobility Assessments Workshop*	<ul style="list-style-type: none"> Review lecture notes before class Be prepared to participate in workshop 	None
13	Tues. Nov 23	Obesity, Diabetes & Aging • <i>Journal Club Presentation #5*</i>	<ul style="list-style-type: none"> Review lecture notes/prerecorded videos on own time Be prepared to discuss assigned readings 	<u>Journal Club Presentation (Group #5) Due</u>
	Thurs. Nov 25	Osteoarthritis in Older Adults • <i>No In-Person Class</i>	<ul style="list-style-type: none"> Review lecture notes/prerecorded videos on own time 	<u>Group Final Reports Due</u>
14	Tues. Nov. 30	Master's Athletes • <i>No In-Person Class</i>	<ul style="list-style-type: none"> Review lecture notes/prerecorded videos on own time 	None
	Thurs. Dec. 2	NO CLASS	<ul style="list-style-type: none"> None 	None

Note: Asterisks “*” indicate a class session in which active participation is required and will count toward your final participation grade. For students unable to attend one of these class sessions due to a documented reason, you can still participate through the myCourses discussion forum as directed. Students are permitted to miss up to two of these mandatory sessions without penalty.