

**Department of Kinesiology & Physical Education – McGill University**

**EDKP 446 - Physical Activity and Ageing - Fall 2023 (3 credits)**

**Course Prerequisite:** EDKP 395 Exercise Physiology

**Course Schedule:** Tuesday and Thursday, 10:05 – 11:25 am, Trottier Building 2110

**Instructor Information:**

**Name and Title:** Jenna C. Gibbs, Ph.D.

**Office Location:** Currie Gym Office A208

**E-mail:** [jenna.gibbs@mcgill.ca](mailto:jenna.gibbs@mcgill.ca)

**Office Hours:** Contact instructor by email for appointment

**Teaching Assistant (TA) Information:**

**Name and Title:** Silar Gardy, M.Sc.

**Office Location:** Currie Gym Room 201

**E-mail:** [silar.gardy@mail.mcgill.ca](mailto:silar.gardy@mail.mcgill.ca)

**Office Hours:** Contact TA by email for appointment

**Course Overview:** This course is designed to describe the 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.

**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.
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 prepare an exercise program to promote healthy aging and prevent and manage age-related disease.

**Instructional Methods:** Two in-person class sessions per week (*see Course Schedule*). Course activities will vary to include: lectures by course instructor and guest speakers, 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. Please find relevant instructions and tutorials for myCourses 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

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speakers, hands-on workshops, 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 and lecture notes 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 (computer, tablet, smartphone)

### Optional Course Materials:

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

### 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 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 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 (Group)	<i>See Course Schedule and myCourses.</i>	15%
Mid-term Exam	Tues. October 24	30%
Case Study Assignment (Individual)	Thurs. November 16	20%
Group Term Project: Exercise Program for Older Adults	Tues. December 5 (myCourses)	30%
Participation	Ongoing throughout semester	5%

Note: In the event of extraordinary circumstances beyond the University's control, the course 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

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C+	60-64
C	55-59
D	50-54
F (fail)	0-49

**Journal Club Presentation (Group):** 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 groups of 5-6 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 Thursday September 28 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’s 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.

**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 30% 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, 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.

**Case Study Assignment (Individual):** Students will prepare a written assignment where they will answer questions about a case study (worth 20% of their final grade) that will be posted on myCourses by October 24. The assignment must be submitted on myCourses by November 16 at 11:59 PM. Students are permitted to discuss the assignment with classmates, but must submit their own independent work as an individual written assignment. Special accommodation may be granted by the instructor for the previously mentioned exceptional circumstances with proper documentation and notification at least two weeks prior to the originally scheduled assignment due date to support their circumstance. Late assignments can be handed in on MyCourses, and

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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.

**Group Term Project – Exercise Program:** Students will prepare a written report describing an exercise program targeting an age-related disease/condition of their choice (worth 30% of the final grade). Students will work in groups of 3-4 students. Student will also give a brief presentation during classtime on December 5 where they will summarize their exercise programs. Specific details on the assignment will be posted on myCourses. Students are permitted to refer to information from the course notes, existing published literature, assigned readings, and group discussions. 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 one month prior to the assignment due date. The final project must be submitted on myCourses by December 5 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.

**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.

**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 MS Teams/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.

**Assessment:** 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).

**Charter of Students' Rights:** Additional policies governing academic issues that affect students can be found in the [McGill Charter of Students' Rights](#).

**Academic Integrity:** McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the [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](#).

**Copyright:** 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.

**Equity, Diversity, and Inclusion (EDI) Statement:** This course strives to be an inclusive learning environment. It is my intent to present materials and activities that are respectful of diversity, including but not limited to gender, disability, sexuality, age, ethnicity, race, and culture. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our course sessions or activities conflict with your religious events, please let me know so that we can make arrangements for you.

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

**Inclusive Learning Environment:** 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/or [Student Accessibility and Achievement](#).

**Intellectual Property:** I ask for everyone's cooperation in ensuring that course materials are not reproduced or placed in the public domain. This means that each of you can use it for your own purposes, but you cannot allow others to use it by posting it online or giving it or selling it to others who may copy it and make it available. Thank you for your help with this.

**Language of Submission:** In accord with McGill University's [Charter of Students' Rights](#), students in this course have the right to submit in English or in French 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 (Approved by Senate on 21 January 2009). Conformément à [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 (Énoncé approuvé par le Sénat le 21 janvier 2009).

**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

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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.

**Learning Support Resources:** Consult resources from [Teaching and Learning Services](#) (TLS) on topics such as time management, study strategies, group work, exam prep, and more. TLS also offers opportunities to connect with an academic peer mentor through [Stay on Track](#) and to attend workshops. For further individualized support check out the programs and resources from [Student Accessibility & Achievement](#).

**Mercury Course Evaluations:** [Mercury 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.

**Preferred Pronouns:** Please email me or schedule an appointment to meet if you would like me to refer to you by a different name than the [name indicated](#) in your student record or to inform me of your preferred pronouns.

**Respect:** The University is committed to maintaining teaching and learning spaces that are respectful and inclusive for all. To this end, offensive, violent, or harmful language arising in course contexts may be cause for disciplinary action.

**Text-matching:** Work submitted for evaluation as part of this course may be checked with text-matching software within myCourses.

**Wellness:** Many students may face mental health challenges that can impact not only their academic success but also their ability to thrive in our campus community. Please reach out for support when you need it; [wellness resources](#) are available on campus, off campus, and online.

**Workload Management Skills:** If you are feeling overwhelmed by your academic work and/or would like to further develop your time and workload management skills, don't hesitate to seek support from [Student Services](#).

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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. Aug. 31	Introduction to Physical Activity & Aging	<ul style="list-style-type: none"> <li>Review course outline and lecture notes before class</li> </ul>	None
2	Tues. Sept. 5	Aging Processes, Theories & Trends	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Sept. 7	Designing Exercise Programs for Older Adults	<ul style="list-style-type: none"> <li>Review lecture notes and term project instructions before class</li> </ul>	None
3	Tues. Sept. 12	Age-Related Cardiopulmonary Changes	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Sept. 14	Cardiopulmonary Adaptations to Training	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
4	Tues. Sept. 19	Age-Related Muscle Changes	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Sept. 21	Cardiovascular Disease & Exercise <ul style="list-style-type: none"> <li><b>Journal Club Presentation #1*</b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> <li>Be prepared to discuss assigned readings</li> </ul>	<b><u>Journal Club Presentation (Group #1) Due</u></b>
5	Tues. Sept. 26	Skeletal Muscle Adaptations to Training	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Sept. 28	Sarcopenia & Frailty <ul style="list-style-type: none"> <li><b>Journal Club Presentation #2*</b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	<b><u>Journal Club Presentation (Group #2) Due</u></b>
6	Tues. Oct. 3	Protein Metabolism & Aging <ul style="list-style-type: none"> <li><b>Guest Lecture: Dr. Tyler Churchward-Venne*</b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Oct. 5	Age-Related Bone Changes	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
7	Tues. Oct. 10	<b>FALL BREAK – NO CLASS</b>	None	None
	Thurs. Oct. 12	Bone Adaptations to Training	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
8	Tues. Oct. 17	Osteoporosis & Exercise <ul style="list-style-type: none"> <li><b>Journal Club Presentation #3*</b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> <li>Be prepared to discuss assigned readings</li> </ul>	<b><u>Journal Club Presentation (Group #3) Due</u></b>
	Thurs. Oct. 19	Barriers and Facilitators to Exercise Adherence <ul style="list-style-type: none"> <li><b>Literature Search Tutorial with Ms. Veronica</b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes</li> <li>Be prepared to participate in workshop</li> </ul>	None



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		<i>Bergsten*</i>		
<b>9</b>	Tues. Oct. 24	<b>MID-TERM EXAM</b>	None	<b><u>Mid-term Exam In-Class</u></b>
	Thurs. Oct. 26	Aerobic Training in Older Adults	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
<b>10</b>	Tues. Oct. 31	Strength/Flexibility Training in Older Adults	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Nov. 2	Falls Prevention <ul style="list-style-type: none"> <li><b><i>Journal Club Presentation #4*</i></b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> <li>Be prepared to discuss assigned readings</li> </ul>	<b><u>Journal Club Presentation (Group #4) Due</u></b>
<b>11</b>	Tues. Nov. 7	Physical Function in Older Adults	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Nov. 9	Osteoarthritis & Exercise <ul style="list-style-type: none"> <li><b><i>Journal Club Presentation #5*</i></b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> <li>Be prepared to discuss assigned readings</li> </ul>	<b><u>Journal Club Presentation (Group #5) Due</u></b>
<b>12</b>	Tues. Nov. 14	Balance Control and Aging <ul style="list-style-type: none"> <li><b><i>Guest Lecture: Dr. Caroline Paquette*</i></b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Nov. 16	<b><i>Balance &amp; Functional Assessments Workshop*</i></b>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> <li>Be prepared to participate in workshop</li> </ul>	<b><u>Case Study Assignment Due (myCourses)</u></b>
<b>13</b>	Tues. Nov 21	Body Composition, Obesity & Aging <ul style="list-style-type: none"> <li><b><i>Journal Club Presentation #6*</i></b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> <li>Be prepared to discuss assigned readings</li> </ul>	<b><u>Journal Club Presentation (Group #6) Due</u></b>
	Thurs. Nov. 23	Nutrition, Diabetes & Aging	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
<b>14</b>	Tues. Nov. 28	Master's Athletes	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> </ul>	None
	Thurs. Nov. 30	<b>NO CLASS</b>	None	None
<b>15</b>	Tues. Dec. 5	Course Wrap-Up <ul style="list-style-type: none"> <li><b><i>Term Project Showcase*</i></b></li> </ul>	<ul style="list-style-type: none"> <li>Review lecture notes before class</li> <li>Be prepared to share your term project in-class</li> </ul>	<b><u>Term Project Due (In-Class &amp; myCourses)</u></b>

**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.