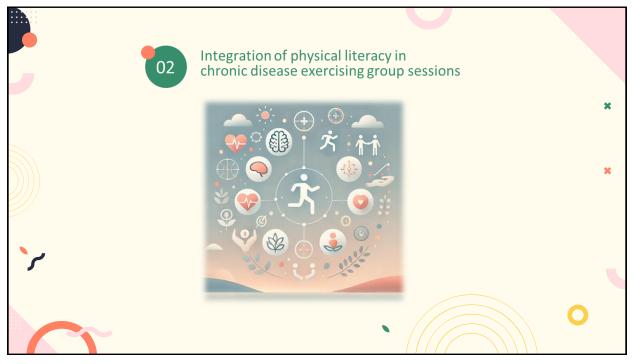


### PL in Health: one of the "blank spots"

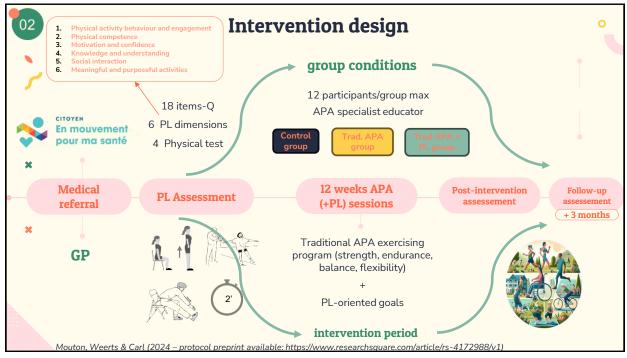
- Major NCDs (cardiovascular diseases, cancer, chronic respiratory diseases, diabetes mellitus)
   are responsible for 74% of global deaths worldwide
- Most physical literacy research is focused on children, few in adults, almost none in older adults and chronic disease populations
- Greater emphasis is placed on the physical domain of physical literacy, leaving the remaining domains (social, cognitive, and psychological) underrepresented/understudied
- Health care practitioners are not yet engaged with the construct of physical literacy in practice

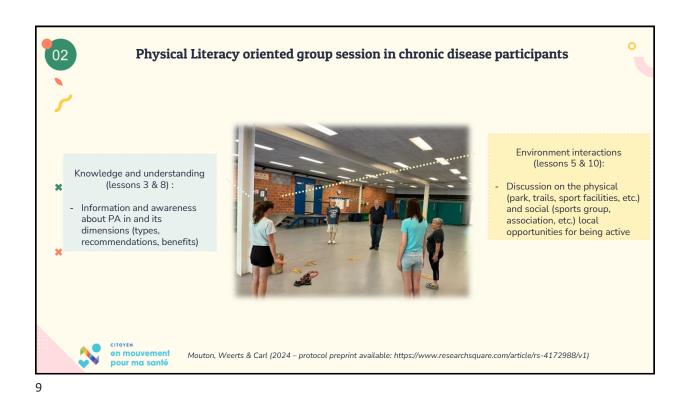
Cornish et al. (2020) Carl et al. (2022; 2023a) WHO, 2022

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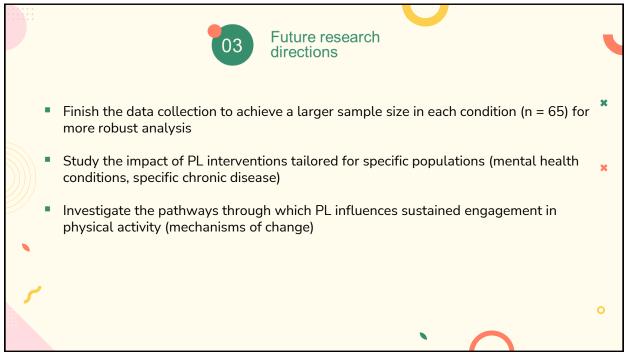






02	Application	2 : Physical	Literacy orie	nted group	session in chro	nic disease part	icipants	
		то			T1 (+3 months)			
مر	PL dimensions	GC (n=6)	GTPA+PL (n=6)	<i>Inter-group</i> <i>P</i> -value	GC (n=6)	GTPA+PL (n=6)	Inter-group P-value	
	Behav./Eng	3,5	4,25	0,54	4	5,5†	0,29	
×	Motivation	6	7	0,66	6,5	7	0,13	
	Know./Und.	7	7	0,66	7	8	0,03*	
×	Social Env.	7	8	0,13	6	8	0,23	
"	Meaningful	6	8	0,18	7,5	8	0,07†	
	Phys. comp.	4,8	5,6	0,15	5,2	7,6*	0,009**	
	PL total score	33,55	36,9	0,23	35,5	43,4 <sup>†</sup>	0,008**	







#### References

Barnett, L. M., Jerebine, A., Keegan, R., Watson-Mackie, K., Arundell, L., Ridgers, N. D., ... & Dudley, D. (2023). Validity, Reliability, and Feasibility of Physical Literacy Assessments Designed for School Children: A Systematic Review. Sports Medicine, 1-25.

Bauman, A. E., Reis, R. S., Sallis, J. F., Wells, J. C., Loos, R. J., & Martin, B. W. (2012). Correlates of physical activity: why are some people physically active and others not? The lancet, 380(9838), 258-271.

Carl, J., Barratt, J., Wanner, P., Töpfer, C., Cairney, J., & Pfeifer, K. (2022). The Effectiveness of Physical Literacy Interventions: A Systematic Review with Meta-Analysis. Sports medicine (Auckland, N.Z.), 52(12), 2965–2999. https://doi.org/10.1007/s40279-022-01738-4

Carl, J., Bryant, A. S., Edwards, L. C., Bartle, G., Birch, J. E., Christodoulides, E., Emeljanovas, A., Fröberg, A., Gandrieau, J., Gilic, B., van Hilvoorde, I., Holler, P., Iconomescu, T. M., Jaunig, J., Laudanska-Krzeminska, I., Lundvall, S., De Martelaer, K., Martins, J., Mieziene, B., Mendoza-Muñoz, Mouton, A., ... Elsborg, P. (2023a). Physical literacy in Europe: The current state of implementation in research, practice, and policy. Journal of exercise science and fitness, 21(1), 165–176. https://doi.org/10.1016/j.jesf.2022.12.003

Carl, J., Jaunig, J., Kurtzhals, M., Müllertz, A. L. O., Stage, A., Bentsen, P., & Elsborg, P. (2023b). Synthesising physical literacy research for 'blank spots': A Systematic review of reviews. Journal of sports sciences, 41(11), 1056–1072. https://doi.org/10.1080/02640414.2023.2259209

Carl, J., Barratt, J., Arbour-Nicitopoulos, K. P., Barnett, L. M., Dudley, D. A., Holler, P., Keegan, R., Kwan, M., Scurati, R., Sum, R. K., Wainwright, N., & Cairney, J. (2023c). Development, explanation, and presentation of the Physical Literacy Interventions Reporting Template (PLIRT). The international journal of behavioral nutrition and physical activity, 20(1), 21. https://doi.org/10.1186/s12966-023-01423-3

Carl, J., Schmittwilken, L., & Pöppel, K. (2023d). Development and evaluation of a school-based physical literacy intervention for children in Germany: protocol of the PLACE study. Frontiers in sports and active living, 5, 1155363. https://doi.org/10.3389/fspor.2023.1155363

#### References

Cornish, K., Fox, G., Fyfe, T., Koopmans, E., Pousette, A., & Pelletier, C. A. (2020). Understanding physical literacy in the context of health: a rapid scoping review. BMC public health, 20, 1-19.

Hulteen, R., Morgan, P., Barnett, L., Stodden, D., and Lubans, D. (2018). Development of foundational movement skills: a conceptual model for physical activity across the lifespan. Sports Med. 48, 1533–1540. doi: 10.1007/s40279-018-0892-6

Geidl, W., Semrau, J., & Pfeifer, K. (2014). Health behaviour change theories: contributions to an ICF-based behavioural exercise therapy for individuals with chronic diseases. Disability and rehabilitation, 36(24), 2091-2100.

Holler, P, Carl, J. van Poppel, M.N.M., Jaunig, J. (2023). Development of the Perceived Physical Literacy Questionnaire (PPLQ) for the adult population. Journal of Exercise Science & Fitness, 21 (4), 424-433. https://doi.org/10.1016/j.jesf.2023.09.003.

IPLA. IPLA definition. Wigan, UK: International Physical Literacy Association; 2017. https://www.physical-literacy.org.uk/.

Jones, G.R., Stathokostas, L., Young, B.W. et al. Development of a physical literacy model for older adults – a consensus process by the collaborative working group on physical literacy for older Canadians. BMC Geriatr 18, 13 (2018). https://doi.org/10.1186/s1287

Keegan, R. J., Barnett, L. M., Dudley, D. A., Telford, R. D., Lubans, D. R., Bryant, A. S., Roberts, W. M., Morgan, P. J., Schranz, N. K., Weissensteiner, J. R., Vella, S. A., Salmon, J., Ziviani, J., Okely, A. D., Wainwright, N., & Evans, J. R. (2019). Defining Physical Literacy for Application in Australia: A Modified Delphi Method. Journal of Teaching in Physical Education, 38(2), 105-118. Retrieved Nov 8, 2023, from <a href="https://doi.org/10.1123/jtpe.2018-0264">https://doi.org/10.1123/jtpe.2018-0264</a>

Kahn, E. B., Ramsey, L. T., Brownson, R. C., Heath, G. W., Howze, E. H., Powell, K. E., ... & Corso, P. (2002). The effectiveness of interventions to increase physical activity. A systematic review. American journal of preventive medicine, 22(4), 73-107.

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## References

Liu C-Y, Lin LL-C, Sheu J-J, Sum RK-W. Psychometric Validation of Senior Perceived Physical Literacy Instrument. International Journal of Environmental Research and Public Health. 2022; 19(11):6726. https://doi.org/10.3390/ijerph19116726

Marcus, B. H., & Simkin, L. R. (1994). The transtheoretical model: applications to exercise behavior. Medicine and science in sports and exercise, 26(11), 1400–1404.

Marsault, C. (2017). Le sport-santé, un objet médical, social ou sportif? Le dispositif strasbourgeois «sport-santé sur ordonnance» comme objet politique transversal. Sciences sociales et sport, 10(1), 21-49.

Petrusevski, C., Morgan, A., MacDermid, J., Wilson, M., & Richardson, J. (2021). Framing physical literacy for aging adults: An integrative review. Disability and Rehabilitation, 44(26), 8149–8160. https://doi.org/10.1080/09638288.2021.2012841

Powell, L. M., Slater, S., Chaloupka, F. J., & Harper, D. (2006). Availability of physical activity-related facilities and neighborhood demographic and socioeconomic characteristics: A national study. American journal of public health, 96(9), 1676-1680.

 $Prochaska, J. \ O., \& \ Velicer, W. \ F. \ (1997). \ The \ transtheoretical \ model \ of \ health \ behavior \ change. \ American journal \ of \ health \ promotion: AJHP, \ 12(1), 38-48. \ https://doi.org/10.4278/0890-1171-12.1.38$ 

Rimmer J. H. (2012). Getting beyond the plateau: bridging the gap between rehabilitation and community-based exercise. PM & R: the journal of injury, function, and rehabilitation, 4(11), 857–861. https://doi.org/10.1016/j.pmrj.2012.08.008

Ryan, R. M., & Patrick, H. (2009). Self-determination theory and physical. Hellenic journal of psychology, 6(2), 107-124.

# References

 $Weerts, J.\ P., \&\ Mouton, A.\ (2023).\ S3-3 \\ Effects\ of\ a\ physical\ literacy\ intervention\ delivered\ in\ a\ medical\ center\ setting. The\ European\ Journal\ of\ Public\ Health, 33(Suppl\ 1),\ ckad133.016.\ https://doi.org/10.1093/eurpub/ckad133.016$ 

Woessner, M. N., Tacey, A., Levinger-Limor, A., Parker, A. G., Levinger, P., & Levinger, I. (2021). The evolution of technology and physical inactivity: the good, the bad, and the way forward. Frontiers in public health, 9, 655491.

WHO (2022). Invisible Numbers: the True Extent of Noncommunicable Diseases and What to Do about Them. 1st ed. Geneva:

Young, L., Alfrey, L., & O'Connor, J. (2023). Moving from physical literacy to co-existing physical literacies: What is the problem? European Physical Education Review, 29(1), 55-73.

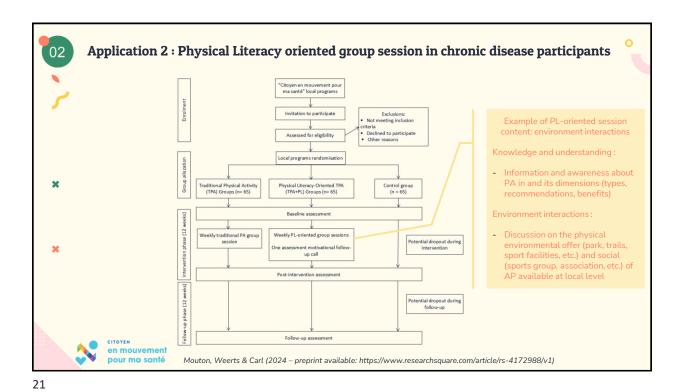
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## **Additional slides**

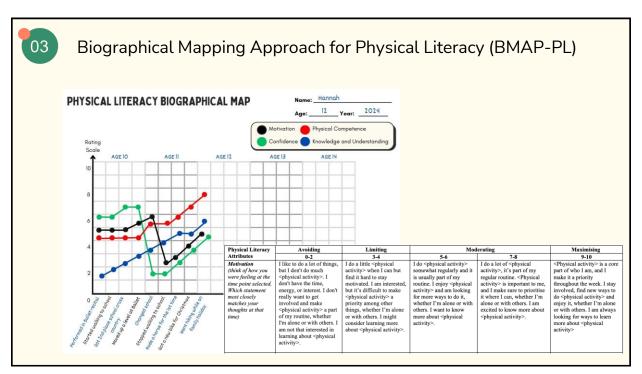


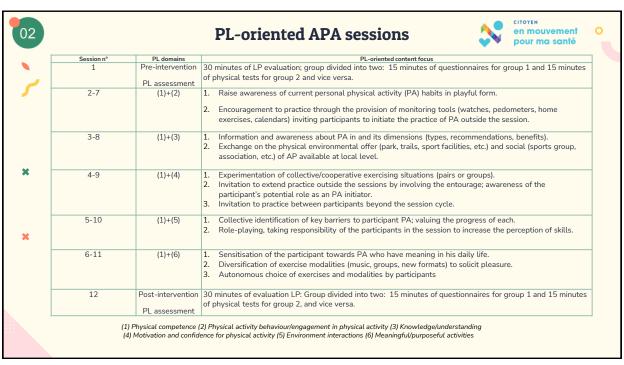
N°	Question	Answer
	In the past 7 days, how many days have you been doing strenuous physical activities such as heavy lifting, digging, fitness	1-2-3-4-5-6-4-7
	or cycling quickly?  In total, how much time have you spent doing intense activities in the last 7 days?	0 : proceed to question 2A h minutes/day
	In total, now much time have you spent doing intense activities in the last 7 days?  In the past 7 days, how many days have you done moderate physical activities such as wearing light loads, cycling quietly,	1-2-3-4-5-6-4-7
ZA	or playing doubles tennis?	0 : proceed to question 3
2B	In total, how much time have you spent doing moderate activities in the last 7 days?	h minutes/day
	How many times a week do you exercise to strengthen your muscles and/or balance?	0-1-2-3-4-5-6-4-7
Α	In the past 7 days, how many days have you walked for at least 10 minutes in a row?	1-2-3-4-5-6-4-7
4B	In total, how long have you spent walking in the last 7 days?	h minutes/day
5	What physical activities are you currently doing during your leisure time, your travels, at work or at home?	Open-ended question
-	2) Motivation and confidence	
6	I am motivated to incorporate regular physical activity into my daily life	Strongly disagree – Disagree –
		agree – strongly agree
7	I am confident in my ability to regulate by myself my daily physical activity practice	Strongly disagree – Disagree –
_	50 50 50 50 50 50 50 50 50 50 50 50 50 5	agree – strongly agree
3		Open-ended question
3	3) Knowledge and understanding	
9	You consider that physical activity is an essential element for your health	Strongly disagree – Disagree –
		agree – strongly agree
10		Strongly disagree – Disagree –
	physical activity  In adults, how many minutes per week is it recommended to practice moderate to high intensity physical activities?	agree – strongly agree
	4) Environment interactions	Open-ended question
	,	
12	You feel supported (e) by your family or loved ones for the physical activities and movements you want to achieve	Strongly disagree – Disagree – agree – strongly agree
13	You know where to go (parks, gyms, etc.) and who to turn to (club, association, relatives) to be able to practice regular	Strongly disagree – Disagree –
	physical activity	agree – strongly agree
1	What places/people could motivate you to exercise regularly?	Open-ended question

	5) Meaningful and purposeful activities		
	You enjoy taking part in physical activities and sports	Strongly disagree – Disagree – agree – strongly agree	
16	You understand the meaning/purpose of integrating physical activity into your daily life	Strongly disagree – Disagree – agree – strongly agree	
	In what physical activities could you find meaning and/or pleasure to practice?	Open-ended question	
6	6) Physical competence		
18	Endurance		
	The 2-minute walking test	Raw value (meters)	
	You are very breathless when you climb two rows of stairs in a row	Strongly disagree – Disagree – agree – strongly agree	
19			
	Unipodal balance test	Raw value (seconds)	
	You may stumble or fall in your daily life	Never – Rarely – Sometimes - Often	
20	Flexibility		
	Sit and Reach test on chair	Raw value (centimeters)	
	You find it difficult to lace up your shoes or reach objects at the top of a shelf	Never – Rarely – Sometimes - Often	
21	Strength		
	30-second Chair Stand Test	Raw value (number of repetitions)	
	You have difficulty carrying well-filled shopping bags home	Never – Rarely – Sometimes - Often	
22	I feel physically competent enough to take part in a variety of regular physical activities	Strongly disagree – Disagree – agree – strongly agree	~
23	In what physical activities do you feel more competent and incompetent?	Open-ended Question	



On-going follow-up of participants' journey: 03 Biographical Mapping Approach for Physical Literacy (BMAP-PL) Invites participants to reflect on key moments in their movement history and assess their physical literacy across four domains: motivation, confidence, physical competence, and knowledge/understanding (interviews). 5 Goal setting and asset BMAP-PL Properties: Personal On-going Non-linear Taking a deeper dive BMAP-PL in H/PE involves five steps Young et al.,2024: https://www.tandfonline.com/doi/full/10.1080/13573322.2024.2383948





Characterist	ics of Physical Literacy Journeys	Unaware of or dismissing potential	Exploring potential	Developing potential	Consolidating potential	Maximising potential
	Motivated to participate in physical activity.	I seldom want to engage in physical activity	I am physically active because I enjoy it.	I participate in physical activity for the joy of it and because it is important to me.	I maintain being physically active because it is part of who I am and because I value it.	I am motivated to try new activities and challenge my capabilities.
Motivation	Sustained application and engagement.  Motivated to apply oneself.	I do not apply myself fully when engaged in physical activity	I apply myself during physical activity.	I do not give up easily and keep going. I am persistent and resilient.	I sustain my engagment and involvement in regular physical activity.	I am determined to challenge my self in a range of environments.
	Motivated to take steps to include physical activity in life my pattern.	I take steps to avoid physical activity	Physical activity is included in my life pattern.	Physical activity forms a increasingly regular part	Physical activity is a secure part of my life pattern.	I seek new ways to include physical activity in my life pattern.
	Confident to engage.	I am not confident to take part in	I look forward to taking part in physical	I am confident that I can fulfil the tasks set and	I am certain that participation will be rewarding and	I am confident that, with practice/effort I can fulfil the
	Self perception of ability and belief	physical activity I am not confident that I can make	activity.  I am confident that I can make progress	that others will support me.  I am aware that I have made progress in some	enhance my self confidence.  I know I can have rewarding experiences in physical	challenges set by myself and others.  I appreciate my movement ability and am confident that I can
Confidence	that progress can be made.	progress in phsylical actionity	in physical activity.	activities and confident that I am capable of making further progress.	activities and this enhances my self esteem.	enhance my expertise and learn from future challenging experiences.
	Confident to interact and engage with a range of environments.	I am generally not at ease in physical activity environments	I am at ease engaging in physical activity in varied indoors and outdoors situations.	I look forward to new settings and activities in the confidence that I can engage effectively within these environments.	I am confident to explore a range of settings, more or less familiar to me, with the assurance that I can respond to the demands they make on me.	I relish new and challenging environments and set myself ambitious goals.
	Movement patterns that constitute the foundation of all movement/physical activity.	I have limited movement vocabulary related to physical activities	I am developing my movement vocabulary associated with a wide variety of physical activities.	I am diveloping general and refined movement patterns and linking them into sequences associated with a range of physical activities.	I continue to apply and adapt my movement patterns that form more complex sequences related to the physical activities in which I participate.	I am able to move effectively using specific movement patterns in one or more challenging physical activities.
Physical Competence	Movement within a wide range of environments both individually and with others.	I am seldom able to move effectively in movement environments	I am starting to engage a wide variety of physical activity environments both individally and with others.	I am successfully engaging in physical activity in an increasing range of varied environments both individually and with others.	I continue to engage effectively and efficiently in a variety of physical activity environments both individually and with others.	I seek out opportunities to challenge myself in a range of physical activity environments invidually and/or with others.
	Sensitive perception of and perceptive action in interaction with physical activity environments.	I am not aware of movement requirements related to most physical activity environments.	t am starting to develop my awareness of the movement requirements of varied physical activity environments.	I am becoming more aware of and sensitive to the demands presented by varied physical activity environments.	I show heightened sensitivity to and awareness of my physical competence when interacting perceptively in physical activity environments.	I am perceptive in appreciating all aspects of challenging physical activity environments, anticipating movement needs or possibilities and responding appropriately to these with perception and imaginistion.
	K&U - Reflecting and improving performance.	I find it difficut to describe what I am doing well and where I need to improve	I can identify movements that I am working on and think about what I need to improve.	I can describe movements I that I am working on, suggesting where I am being successful, and targets that I could work towards.	I can evaluate movements that I am working on, identifying where I am being successful, setting realistic targets and devising ways in which I can work towards those targets.	I can analyse all aspects of movement that I am working on, describing my strengths and aspects that require improvement. I challenge myself by devising strategies through which I can reach targets.
Knowledge and Understanding	K & U - Planning, interacting and creativity.	I find it hand to work by myself or with others when I participate in physical activity	i can work individually and with others in planning and adapting movement sequences and physical activities, contributing ideas and listening to the views others.	I can work individeally and with others, in a range of settings, creating and refining movement sequences and physical activities, contributing ideas, listening to and respecting the views others.	I can work individually and with others in reflecting on, creating and refining movement sequences and physical activities. I contribute ideas, listening to and respecting the views of others and play my part in different roles in competing and co-operating with others.	I work individually and with others, in challenging physical activity environments, creatively planning my own and others responsibilities in competitive and co-operative situations.
	K.S.U - Wellbeing and valuing physical activity.	I am not conviced of the importance of physical activity for my holistic health and well-being.	I understand that physical activity helps me to keep well so that I can enjoy life.	I understand that participating in physical activities will have a beneficial effect on my holistic health and provide opportunities for me to shove in physical activity settings alone and/or with others in a variety of different environments.	I understand that participating in a range of physical activities, will have a positive impact on my holistic health, and enable me to maintain my quality of life.	I understand that participating in a range of physical activities opens up a world of opportunity for challenging myself in worthwhite sequences in a wale variety of settings that will contribute to my holistic health as well as enhance my quality of life.
		Ch	arting Phys	ical Literacy	Journey Tool	

