

The Physical Therapist's Role in Preventing Injuries in the Growing Sport of Pickleball

Cassidy Schultz, PT, DPT

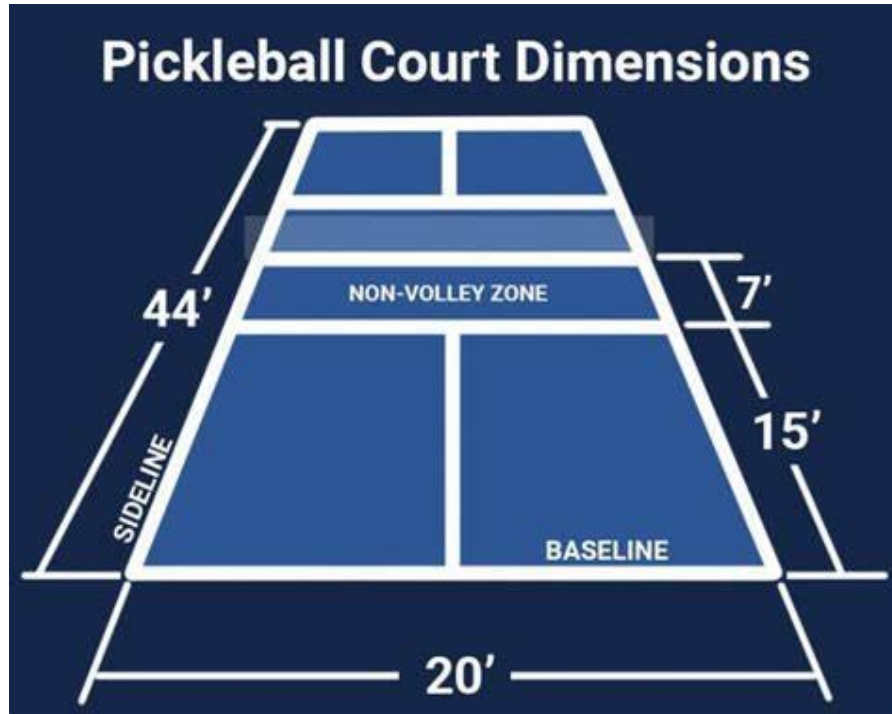
Objectives

- Describe Pickleball and the sports growth in the US
- Identify benefits to maintaining an active lifestyle, specifically through participation in activities such as Pickleball
- Highlight age groups/people playing Pickleball
- Identify common Pickleball injuries and appropriate treatments
- Understand the Physical Therapists role in Pickleball injury prevention

Pickleball



Pickleball



Growth in US



11,885 places to play



8.9 million players

Growth in US

4
Collegiate
Grants



69
Community
Grants

92
Youth Grants

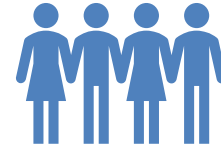


Why?

Why is it Growing?



Low impact



Inclusive



“Active Aging”



Social relationships

Emotional balance

Diet

Physical exercise

Memory

Cultural, intellectual, affective, and
social activities

“Active Aging”

“remaining
in good
health”

“feeling
satisfied
with life”



“adapting to
changes related
to aging”

“taking care
of oneself”

“having family members and
friends who are there”

Why Pickleball?

Psychological benefits of physical and sporting activity

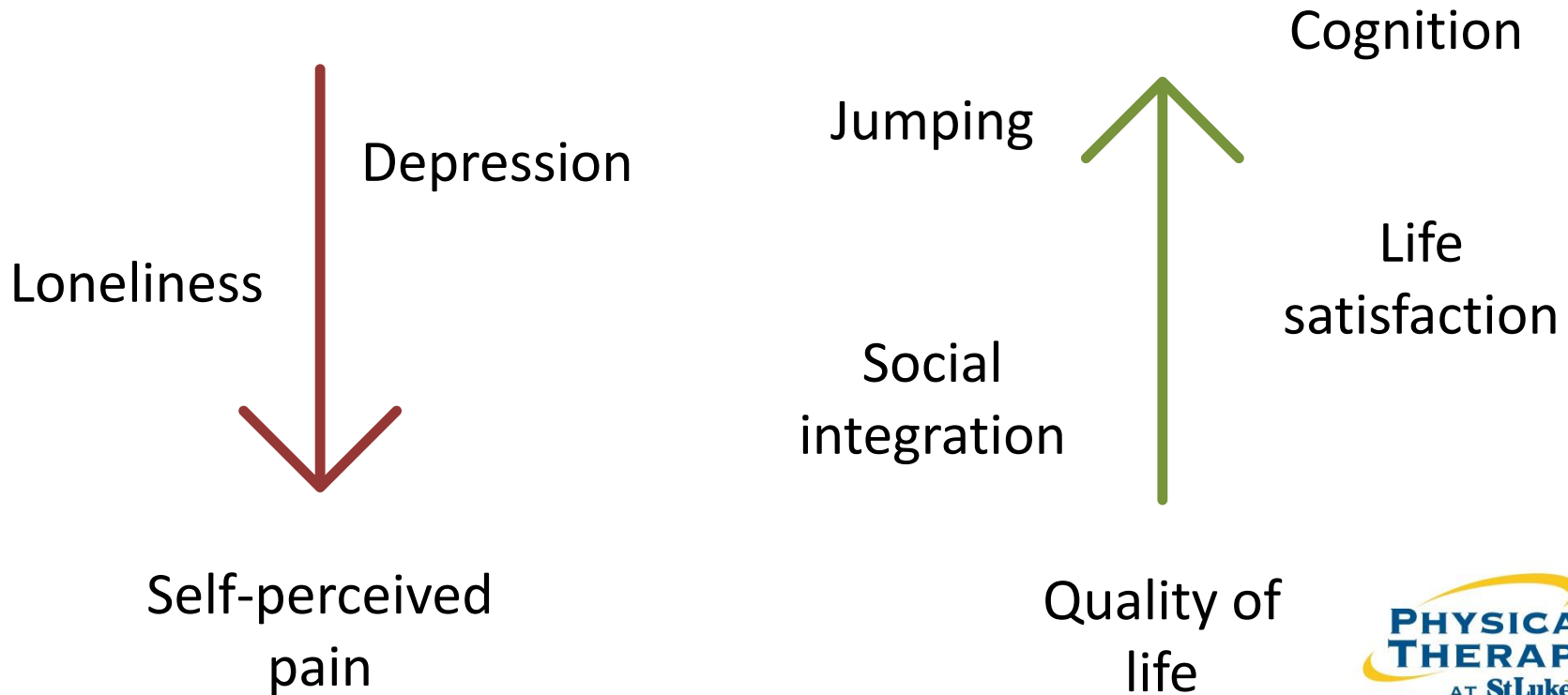
Competition



Task-oriented

“Mastering difficult training technique”

Healthy Aging



Who is Playing?



Ages	Total	Core	Casual
6-17	21.2%	14.2%	23.9%
18-34	28.8%	16.8%	33.5%
35-54	20.4%	17.0%	21.8%
55-65	12.0%	19.2%	9.2%
65+	17.6%	32.7%	11.6%

52%

Research

90.9%

Vitale et al, 2020

90.7%

Cerezuela et al, 2023

90.9%

Kasper et al, 2023

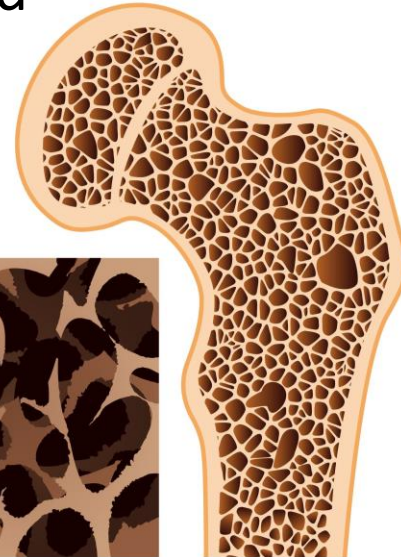
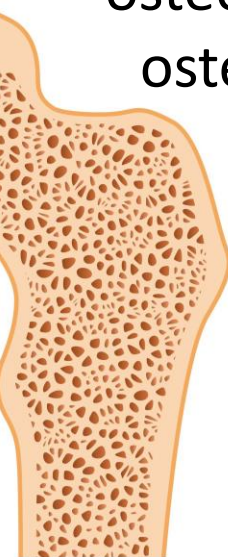
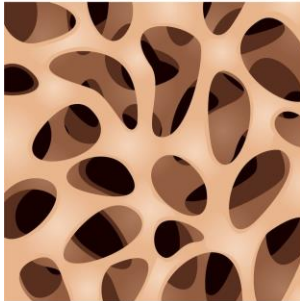
Why Do We Care?

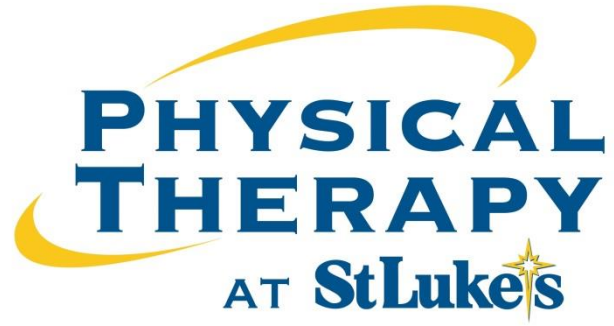
Mechanical forces
stress injuries

19,012
Highest
prevalence of
osteopenia and
osteoporosis

Retired
individuals
playing for
hours

Improper
warm up or
stretching





Common Injuries

Types of Injuries

Sprains/strains of LE

Sprains/strains = 28.7%

Sprains/strains of UE



Fracture = 27.7%

Trunk and low back

Contusion/abrasion = 11.9%

Laceration = 5.9%

Acute Injuries

- Sprains with inversion
- Achilles tendon
- Knee injuries – sprains, meniscal, ligamentous
- Hamstrings, quadriceps, hip flexors, adductors, calves



Chronic Injuries

Lower Extremity

- Plantar fascia and heel contusion
- Strains of gastrocnemius
- Hamstring, quadriceps, groin, or lumbar strains

Upper Extremity

- Flexor and extensor tendon strain at wrist
- Epicondylitis injuries at elbow
- *Less common for shoulder*

Joint Specific Overuse

Knee

- Meniscal
- Patellar tendinopathy
- MCL strains
- OA flares

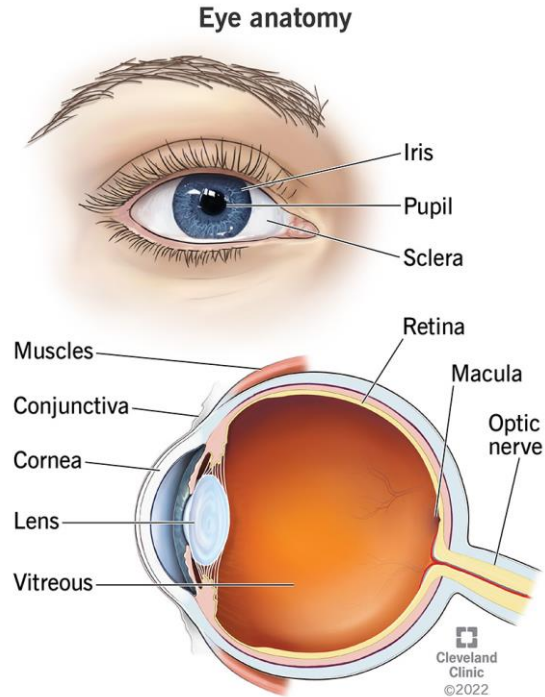
Shoulder

- RTC tendinopathy

Other

- Lateral epicondylitis
- Achilles tendonitis
- Plantar fascia

Eye Injuries



- Corneal abrasions
- Retinal tears
- Traumatic lens subluxation
- Traumatic glaucoma and macular edema

So What?

Safety

Prevention



Education



Warm up



Footwear



Balance/agility

ACSM Guidelines

“A program of regular exercise that includes cardiorespiratory, resistance, flexibility, and neuromotor exercise training *beyond* activities of daily living to improve and maintain physical fitness and health is *essential* for most adults.”

ACSM Guidelines

Moderate Intensity

- >30 min/day
- >5 day/week
- 150 min/week

Vigorous Intensity

- >20 min/day
- >3 days/week
- >75 min/week



Dynamic Warmup



**Primes body
for activity**



**Encourages
blood flow**

Footwear



**Enhance sports
performance**



**Prevent
injuries**



**Shock absorption
and lateral
stability**

Footwear



- Cloth sport shoes, running shoes, basketball shoes, crosstraining shoes, and barefoot conditions assessing for cushioning performance and lateral stability
- Findings: stability best in cross-training and basketball shoes

Plyometrics

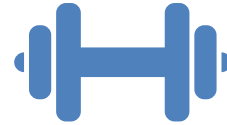


- 3-9 weeks of plyometrics training
- Resulted in small to moderate effects in physical performance including sprint speed, lower extremity muscle power, and agility

Exercise Training



**Speed and
agility**



**Increased physical
fitness**

Eyewear

???



???

Action in the Lehigh Valley



Allentown

Grange Road Park - [Allentown](#), PA
Upper Macungie Township Grange Park - [Allentown](#), PA
JCC (Jewish Community Center) - [Allentown](#), PA
Lower Macungie Municipal Park - [Allentown](#), PA
Prater Park - [Allentown](#), PA
Lehigh Valley Active Life - [Allentown](#), PA
Rodale Park - [Allentown](#), PA
Jewish Community Center Of The Lehigh Valley - [Allentown](#), PA
Blue Barn Park - [Allentown](#), PA

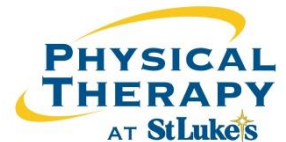
Bethlehem

[Bethlehem](#) Church - Ridgewood , NJ
Hanover Township Recreation Center - [Bethlehem](#), PA
[Bethlehem](#) Township Community Center - [Bethlehem](#), PA
Greater Valley YMCA- [Bethlehem](#) Branch - [Bethlehem](#), PA
Traditions of America at Hanover - [Bethlehem](#) , PA
Traditions of Hanover - [Bethlehem](#) , PA
[Bethlehem](#) First United Methodist Church - [Bethlehem](#), Ga
[Bethlehem](#) Area Ymca - Delmar, NY

SLUHN SportsPlex Facility



December 20, 2023



“This is a one-of-a-kind St. Luke’s “fit for life” campus for all ages... featuring the fastest growing sport in the country for all ages.”

Bottom Line

Pickleball is
gaining
popularity



Older adults
are more
prone to injury



Core players
are older



PT for injury
prevention



Thank you!



References

- [Pickleball Annual Growth Report - USA Pickleball](#)
- Cerezuela JL, Lirola MJ, Cangas AJ. Pickleball and mental health in adults: A systematic review. *Front Psychol.* 2023 Feb 21;14:1137047. doi: 10.3389/fpsyg.2023.1137047. PMID: 36895753; PMCID: PMC9988900.
- Pergolizzi J Jr, Matera J, LeQuang JAK. Treating Geriatric Sports Injury Among Pickleball Players: A Narrative Review of an Exercise Craze Among Seniors. *Cureus.* 2023 Dec 4;15(12):e49909. doi: 10.7759/cureus.49909. PMID: 38174176; PMCID: PMC10763694.
- Caprara M, Molina MÁ, Schettini R, Santacreu M, Orosa T, Mendoza-Núñez VM, Rojas M, Fernández-Ballesteros R. Active aging promotion: results from the vital aging program. *Curr Gerontol Geriatr Res.* 2013;2013:817813. doi: 10.1155/2013/817813. Epub 2013 Feb 7. PMID: 23476644; PMCID: PMC3580923.
- Fernández-Ballesteros R, Robine JM, Walker A, Kalache A. Active aging: a global goal. *Curr Gerontol Geriatr Res.* 2013;2013:298012. doi: 10.1155/2013/298012. Epub 2013 Feb 13. PMID: 23476642; PMCID: PMC3586450.
- Kasper AA, Gibbons JL, Abboudi J, Aita D, Takei TR, Fletcher D, Gallant GG, Kwok M, Beredjiklian P. Pickleball- and Paddleball-Related Injuries to the Upper Extremity. *Cureus.* 2023 Jun 1;15(6):e39831. doi: 10.7759/cureus.39831. PMID: 37397683; PMCID: PMC10314735.
- Vitale K, Liu S. Pickleball: Review and Clinical Recommendations for this Fast-growing Sport. *Curr Sports Med Rep.* 2020 Oct;19(10):406-413. doi: 10.1249/JSR.0000000000000759. PMID: 33031206.
- Greiner N. Pickleball: Injury Considerations in an Increasingly Popular Sport. *Mo Med.* 2019 Nov-Dec;116(6):488-491. PMID: 31911734; PMCID: PMC6913863.
- Waisberg E, Ong J, Lee AG. Pickleball eye injuries: ocular protection recommendations and guidelines. *Eye (Lond).* 2023 Dec 14. doi: 10.1038/s41433-023-02870-9. Epub ahead of print. PMID: 38097802.
- Weiss H, Dougherty J, DiMaggio C. Non-fatal senior pickleball and tennis-related injuries treated in United States emergency departments, 2010-2019. *Inj Epidemiol.* 2021 May 3;8(1):34. doi: 10.1186/s40621-021-00327-9. PMID: 33934725; PMCID: PMC8091689.
- Garber CE, Blissmer B, Deschenes MR, Franklin BA, Lamonte MJ, Lee IM, Nieman DC, Swain DP; American College of Sports Medicine. American College of Sports Medicine position stand. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. *Med Sci Sports Exerc.* 2011 Jul;43(7):1334-59. doi: 10.1249/MSS.0b013e318213febf. PMID: 21694556.
- [a-road-map-to-effective-muscle-recovery.pdf \(acsm.org\)](#)
- Fong DT, Hong Y, Li JX. Cushioning and lateral stability functions of cloth sport shoes. *Sports Biomech.* 2007 Sep;6(3):407-17. doi: 10.1080/14763140701491476. PMID: 17933201.
- Deng N, Soh KG, Huang D, Abdullah B, Luo S, Rattanakes W. Effects of plyometric training on skill and physical performance in healthy tennis players: A systematic review and meta-analysis. *Front Physiol.* 2022 Nov 24;13:1024418. doi: 10.3389/fphys.2022.1024418. PMID: 36505069; PMCID: PMC9729950.
- Xiao W, Geok SK, Bai X, Bu T, Norjali Wazir MR, Talib O, Liu W, Zhan C. Effect of Exercise Training on Physical Fitness Among Young Tennis Players: A Systematic Review. *Front Public Health.* 2022 Mar 2;10:843021. doi: 10.3389/fpubh.2022.843021. PMID: 35309192; PMCID: PMC8924058.