Health Benefits And Considerations: Sports Participation And Physical Activity For Transgender And Gender Diverse (TGD) People

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- Founded 1971
- Mission: To enhance the wellbeing of the LGBTQIA+ community as well as people in our neighborhoods and beyond through access to the highest quality health care, education, research, and advocacy
- Integrated primary care model, including HIV and transgender health services

The Fenway Institute

- Research, Education, Policy

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- Grand Rounds
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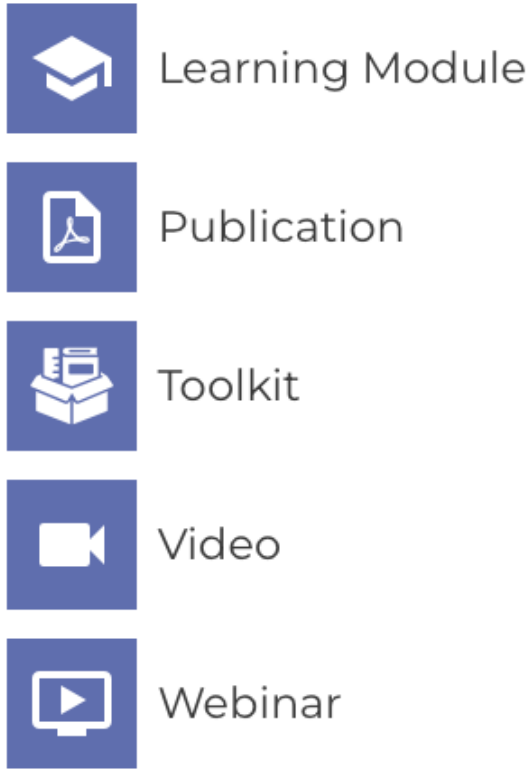
- Environmental Influences On Child Health Outcomes (ECHO) Programs
- Publications and Resources



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Objectives

- Describe the impact that stigma and discrimination have on transgender and gender diverse (TGD) people and the additional barriers this creates for physical and mental well-being.
- Explain the potential benefits of physical activity and sports participation for TGD people.
- Identify the current legal, societal, and systemic barriers that discourage or ban TGD people from participation in physical activities and sports, and the negative mental health impact that this causes.
- Apply best practices for engaging in discussion about physical activity with TGD patients while connecting them to affirming sports-related resources and communities to facilitate their engagement in physical activity.

My Disclosures

- Cisgender
- Straight
- Physician providing care
- Active, but not competitive athlete
- Physical activity researcher

What Is Physical Activity?

World Health Organization

Physical activity refers to all movement including during leisure time, for transport to get to and from places, or as part of a person's work.

CDC

Anything that gets your body moving.

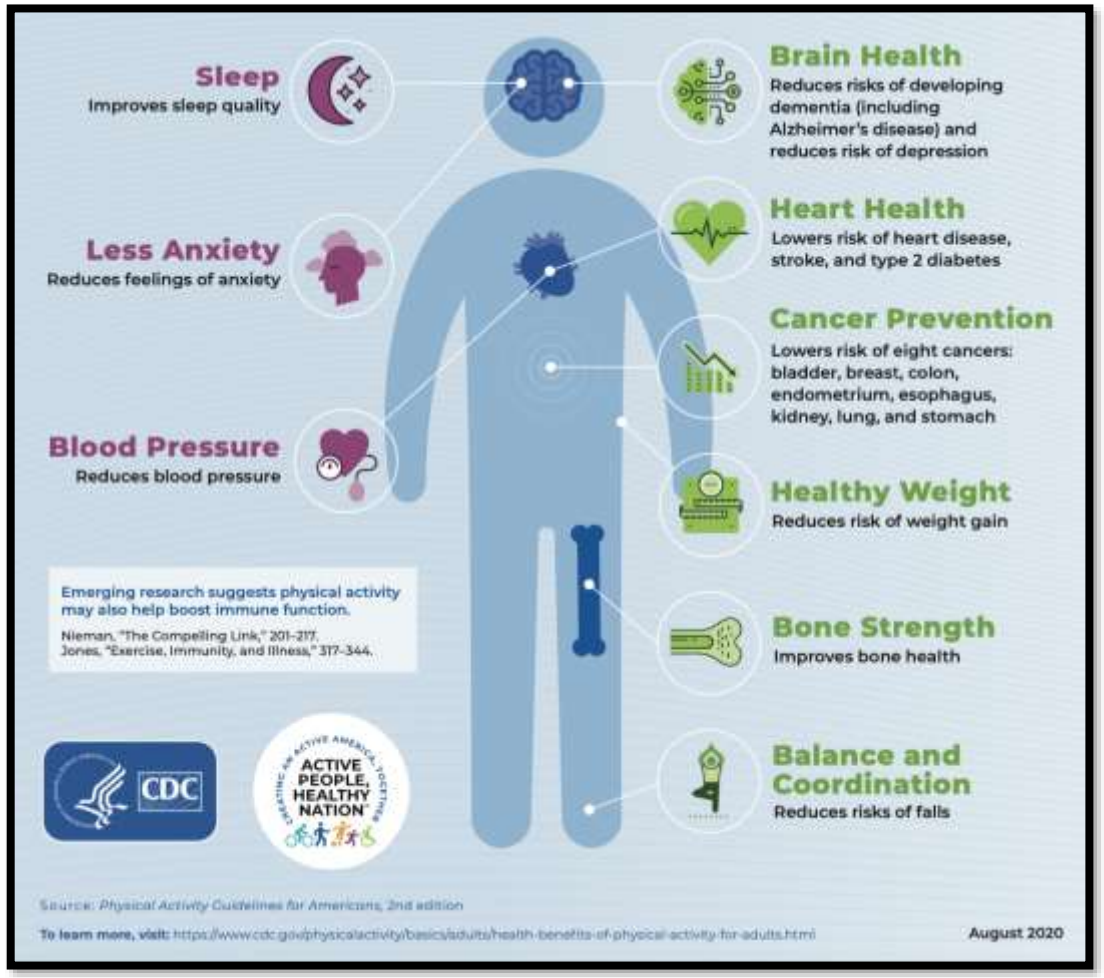
https://www.who.int/news-room/fact-sheets/detail/physical-activity
https://www.cdc.gov/physicalactivity/index.html

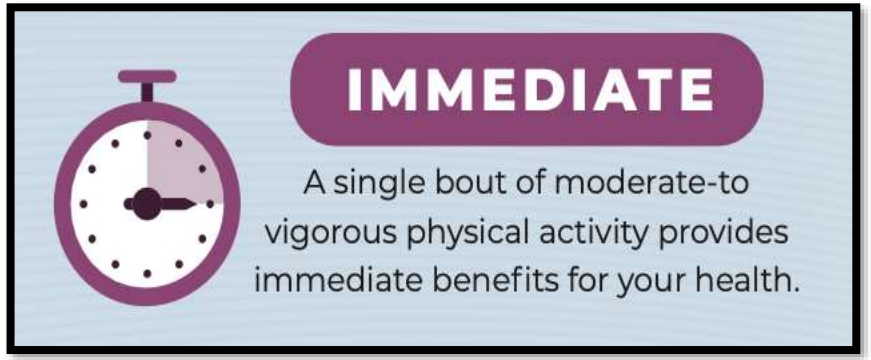
Physical Activity Recommendations

"Each week, adults need 150 minutes of moderate-intensity physical activity and 2 days of muscle strengthening activity."

https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf

Health Benefits Of Physical Activity





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https://www.cdc.gov/physicalactivity/basics/adults/pdfs/Health_Benefits_PA_Adults_Jan2021_H.pdf

Fundamentals Of Health Promotion

Sleep
Physical Activity
Social-emotional Wellbeing
Nutrition
Mental Health
Relationships

Factors Impacting Health Of TGD People

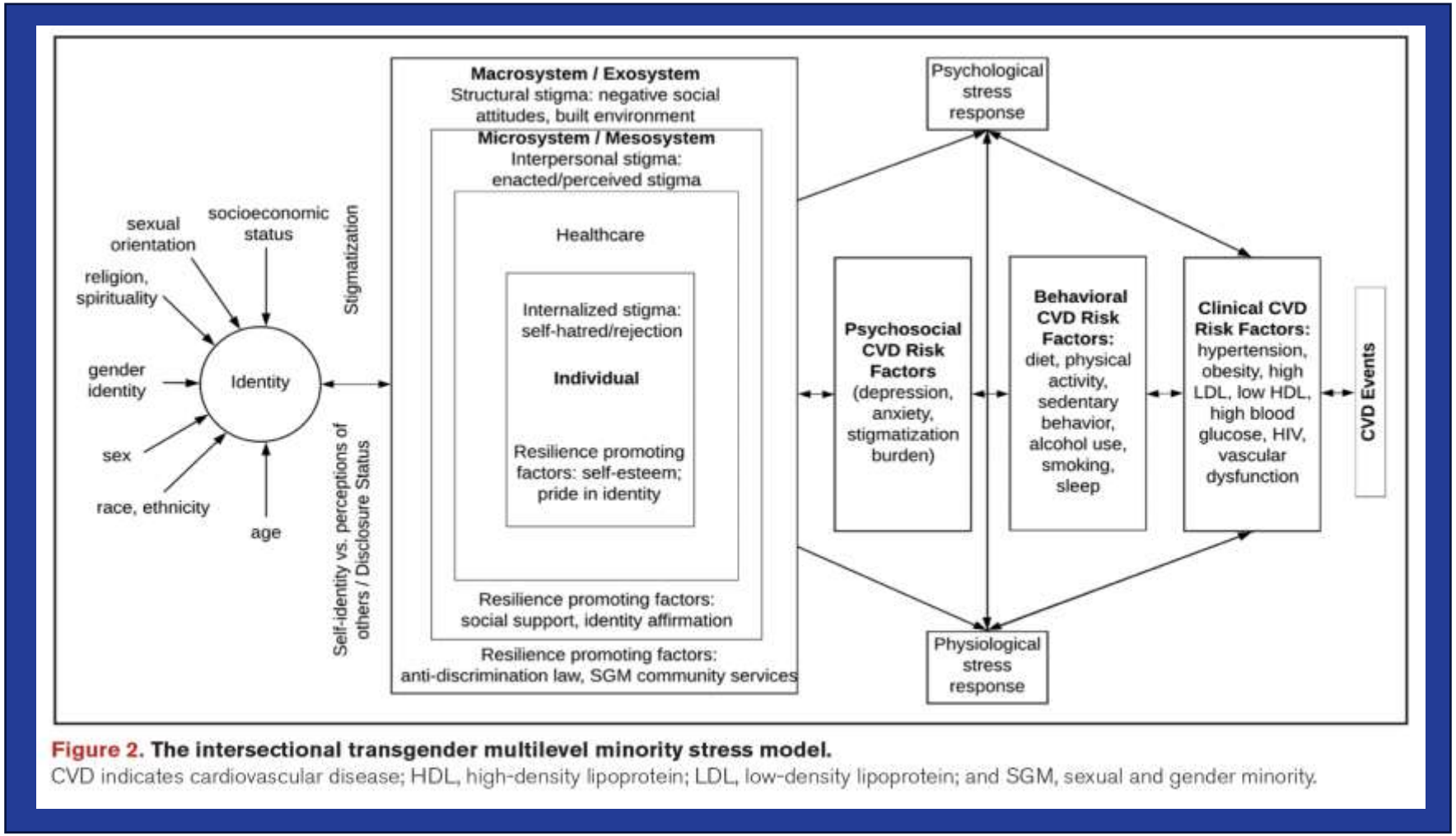
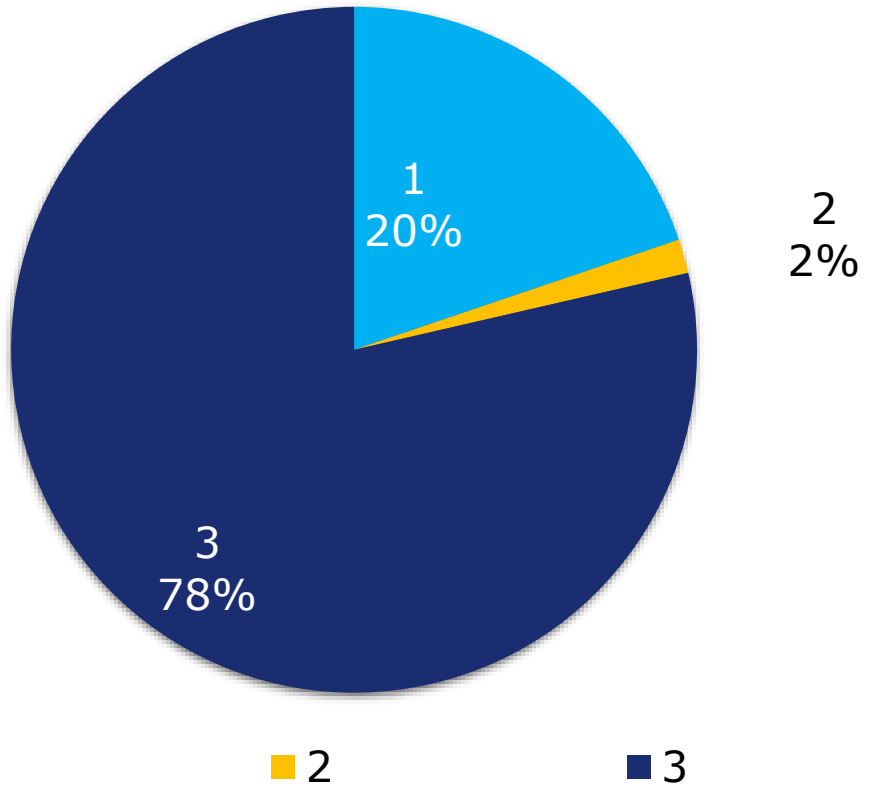


Figure 2. The intersectional transgender multilevel minority stress model.
CVD indicates cardiovascular disease; HDL, high-density lipoprotein; LDL, low-density lipoprotein; and SGM, sexual and gender minority.

Streed et al. Assessing and Addressing Cardiovascular Health in People Who Are Transgender and Gender Diverse: A Scientific Statement From the American Heart Association. Circulation. 2021 Aug 10;144(6):e136-e148

Health Of TGD Individuals

NIH Funded Research on Sexual and Gender Minorities (SGM)



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Streed et al. Assessing and Addressing Cardiovascular Health in People Who Are Transgender and Gender Diverse: A Scientific Statement From the American Heart Association. Circulation. 2021 Aug 10;144(6):e136-e148

Diet And Physical Activity Behaviors Of TGD Adolescents In School

Table 3
BMI category and weight-related behaviors by gender identity and gender identity subgroup

	All, n (%)	All TGNC students, n (%)	All cisgender students, n (%)	*p* value[a]	TGNC assigned male at birth,[b] n (%)	TGNC assigned female at birth, n (%)	Cisgender girls, n (%)	Cisgender boys, n (%)
BMI category	N = 72,787	N = 1,778	N = 71,009	<.0001	N = 510	N = 1,268	N = 34,761	N = 36,248
Underweight/normal weight	54,898 (75.4)	1,162 (65.4)	53,736 (75.7)		342 (67.1)[a]	820 (64.7)[a]	27,603 (79.4)[c]	26,133 (72.1)[b]
Overweight/obese	17,889 (24.6)	616 (34.7)	17,273 (24.3)		168 (32.9)	448 (35.3)	7,158 (20.6)	10,115 (27.9)
Do not eat lunch	8,470 (10.8)	531 (26.0)	7,939 (10.4)	<.0001	124 (19.7)[a]	407 (28.9)[b]	4,803 (12.7)[c]	3,136 (8.2)[d]
Bullied for weight or size	N = 79,417	N = 2,064	N = 77,353	<.0001	N = 634 (.8)	N = 1,430 (1.8)	N = 38,189 (48.1)	N = 39,164 (49.3)
Never/once or twice	74,813 (94.2)	1,735 (84.1)	73,078 (94.5)		546 (86.1)[a]	1,189 (83.2)[a]	36,064 (94.4)[b]	37,014 (94.5)[b]
About once per week, several times per week, or everyday	4,604 (5.8)	329 (15.9)	4,275 (5.5)		88 (13.9)	241 (16.9)	2,125 (5.6)	2,150 (5.5)
Participation in sports (days)	N = 78,822	N = 2,061	N = 76,761	<.0001	N = 633	N = 1,428	N = 37,975	N = 38,786
0	35,733 (45.3)	1,521(73.8)	34,212 (44.6)		415 (65.6)[a]	1,106 (77.5)[b]	17,679 (46.6)[c]	16,533 (42.6)[d]
1, 2, 3, 4	18,773 (23.8)	310 (15.0)	18,463 (24.0)		118 (18.6)	192 (13.5)	9,205 (24.2)	9,258 (23.9)
5 or more	24,316 (30.9)	230 (11.1)	24,086 (31.4)		100 (15.8)	130 (9.1)	11,091 (29.2)	12,995 (33.5)
Physical education (or gym) class attendance in a typical week (days)	N = 78,280	N = 2,038	N = 76,242	.011	N = 628	N = 1,410	N = 37,773	N = 38,469
0	44,743 (57.2)	1,221 (60.0)	43,522 (57.1)		346 (55.1)[a]	875 (62.1)[b]	23,187 (61.4)[b]	20,335 (52.9)[a]
1–2 or more	33,537 (42.8)	817 (40.0)	32,720 (42.9)		282 (44.9)	535 (37.9)	14,586 (38.6)	18,134 (47.1)
Physically active at least 60 min/d in last week (days)	N = 78,209	N = 2,038	N = 76,171	<.0001	N = 626	N = 1,412	N = 37,724	N = 38,447
0	8,270 (10.6)	486 (23.9)	7,784 (10.2)		158 (25.2)[a]	328 (23.2)[b]	4,361 (11.6)[c]	3,423 (8.9)[d]
1–2	13,755 (17.6)	529 (26.0)	13,226 (17.4)		122 (19.5)	407 (28.8)	8,177 (21.7)	5,049 (13.1)
3 or more	56,184 (71.8)	1,023 (50.2)	55,161 (72.4)		346 (55.3)	677 (48.0)	25,186 (66.7)	29,975 (78.0)

- Large, cross-sectional, population-based, state-wide survey of high school students
- *N=80,794*
- Compared dietary and physical activity behaviors among transgender non-conforming (TGNC) vs cisgender youth

Bishop A, Overcash F, McGuire J, Reicks M. Diet and physical activity behaviors among adolescent transgender students: school survey results. *J Adolesc Health.* 2020;66:484–490.

Early Life → Mid Life → Later Life

Higher weight/obesity
Less likely to eat lunch
Increased weight/size bullying
Decreased sports participation
Less overall physical activity
Potential for food inequity

Bishop A, Overcash F, McGuire J, Reicks M. Diet and physical activity behaviors among adolescent transgender students: school survey results. *J Adolesc Health.* 2020;66:484–490.

Health Of TGD Adults In The US 2014-2016

Table 3. Adjusted Odds of Health Outcomes, Health Behavior, and Healthcare Access and Utilization by Gender Identity

Variable	Male-to-female (*n*=1,073)		Female-to-male (*n*=699)		Gender-nonconforming (*n*=449)	
	Ref: Cisgender male, AOR (95% CI)	Ref: Cisgender female, AOR (95% CI)	Ref: Cisgender male, AOR (95% CI)	Ref: Cisgender female, AOR (95% CI)	Ref: Cisgender male, AOR (95% CI)	Ref: Cisgender female, AOR (95% CI)
Chronic conditions						
Multiple condition	1.085 (0.810, 1.453)	0.793 (0.592, 1.064)	**1.876**** (1.321, 2.666)	1.418 (0.996, 2.019)	**2.899**** (1.706, 4.926)	**2.159**** (1.269, 3.675)
CHD/MI	1.008 (0.666, 1.526)	**2.068**** (1.366, 3.133)	0.907 (0.595, 1.382)	**1.895**** (1.240, 2.894)	**2.305*** (1.098, 4.841)	**6.415**** (2.325, 17.702)
Asthma	0.814 (0.587, 1.127)	**0.545**** (0.391, 0.759)	1.092 (0.720, 1.657)	0.765 (0.502, 1.165)	1.549 (0.874, 2.745)	0.982 (0.548, 1.759)
Arthritis	1.215 (0.852, 1.734)	0.834 (0.584, 1.191)	**1.566**** (1.147, 2.138)	1.093 (0.800, 1.494)	1.340 (0.759, 2.367)	0.919 (0.520, 1.627)
Diabetes	1.129 (0.761, 1.675)	1.425 (0.960, 2.116)	1.037 (0.740, 1.452)	1.333 (0.951, 1.869)	1.367 (0.794, 2.353)	**1.728*** (1.003, 2.978)
Depression	**2.024**** (1.522, 2.693)	1.061 (0.795, 1.412)	**3.141**** (2.068, 4.770)	**1.578*** (1.031, 2.416)	**4.306**** (2.690, 6.893)	**2.290**** (1.429, 3.671)
HRQOL-4 measures						
Poor/fair health	0.794 (0.558, 1.129)	0.728 (0.511, 1.038)	0.968 (0.671, 1.396)	0.844 (0.589, 1.210)	**2.514**** (1.432, 4.414)	**2.189**** (1.242, 3.859)
Poor physical health	1.213 (0.836, 1.760)	1.026 (0.706, 1.491)	1.134 (0.807, 1.595)	0.997 (0.709, 1.401)	**1.831*** (1.106, 3.032)	1.559 (0.938, 2.589)
Limitations	**1.620*** (1.063, 2.469)	**1.624*** (1.062, 2.484)	1.119 (0.635, 1.973)	1.206 (0.685, 2.124)	**2.598**** (1.331, 5.074)	**2.685**** (1.360, 5.222)
Mental distress	**1.545*** (1.087, 2.196)	1.026 (0.721, 1.461)	**2.864**** (1.753, 4.681)	**1.808*** (1.091, 2.996)	**3.424**** (2.053, 5.712)	**2.139**** (1.270, 3.603)
Disabilities						
Mobility	**1.454**** (1.001, 2.110)	1.122 (0.772, 1.632)	**1.604**** (1.125, 2.287)	1.250 (0.876, 1.786)	**2.166***** (1.293, 3.626)	**1.686*** (1.004, 2.833)
Cognition	**1.898**** (1.347, 2.674)	**1.434*** (1.014, 2.028)	**1.609*** (1.072, 2.415)	1.253 (0.833, 1.885)	**4.689***** (2.873, 7.654)	**3.656**** (2.237, 5.975)
Independent living	**1.893***** (1.242, 2.889)	1.187 (0.773, 1.821)	**1.943***** (1.323, 2.852)	1.262 (0.859, 1.853)	**5.144***** (3.113, 8.497)	**3.361**** (2.034, 5.554)
≥1 disability	**1.677***** (1.207, 2.330)	1.329 (0.955, 1.849)	**1.700***** (1.173, 2.463)	1.403 (0.965, 2.038)	**3.627***** (2.281, 5.768)	**2.929**** (1.836, 4.675)
Health behavior						
No exercise	1.224 (0.902, 1.659)	1.006 (0.740, 1.368)	**1.850**** (1.305, 2.621)	**1.510*** (1.062, 2.147)	**1.874*** (1.090, 3.223)	1.583 (0.919, 2.727)
Current smoker	0.969 (0.650, 1.444)	1.124 (0.799, 1.582)	**1.864*** (1.083, 3.208)	1.616 (0.925, 2.825)	1.006 (0.559, 1.812)	1.003 (0.630, 1.598)
Heavy episodic drinker	1.148 (0.765, 1.723)	**1.813**** (1.263, 2.603)	0.548 (0.281, 1.072)	1.032 (0.631, 1.688)	0.696 (0.388, 1.248)	1.456 (0.886, 2.394)
Obese	0.981 (0.951, 1.011)	0.956 (0.688, 1.332)	0.941 (0.676, 1.309)	0.798 (0.560, 1.137)	0.781 (0.548, 1.111)	0.985 (0.620, 1.565)
Healthcare access and services						
No primary care visit	0.780 (0.516, 1.180)	1.144 (0.755, 1.734)	**0.625*** (0.419, 0.933)	0.866 (0.581, 1.292)	0.919 (0.591, 1.430)	1.392 (0.897, 2.161)
No dental visit	1.369 (0.917, 2.044)	**1.754**** (1.172, 2.626)	1.02 (0.567, 1.836)	1.328 (0.737, 2.394)	1.613 (0.855, 3.043)	**2.176*** (1.153, 4.105)
No visit because of cost	**1.612***** (1.065, 2.395)	1.159 (0.772, 1.740)	**2.147**** (1.065, 2.395)	1.543 (0.880, 2.707)	**2.147***** (1.051, 3.171)	1.368 (0.789, 2.371)
No primary health provider	0.821 (0.528, 1.277)	1.551 (0.993, 2.421)	1.095 (0.671, 1.786)	**2.011**** (1.226, 3.298)	0.774 (0.461, 1.301)	1.538 (0.919, 2.575)
Never tested for HIV	0.864 (0.640, 1.166)	0.985 (0.728, 1.331)	0.847 (0.538, 1.335)	0.989 (0.625, 1.564)	0.717 (0.466, 1.101)	0.842 (0.545, 1.301)
No flu shot in past year	0.872 (0.649, 1.170)	1.147 (0.853, 1.542)	0.921 (0.658, 1.290)	1.235 (0.880,1.734	1.126 (0.716, 1.772)	1.465 (0.929, 2.311)

Adjusted for age, race/ethnicity, relationship status, educational attainment, health insurance coverage, and state of residence

- Nationally representative population data (<u>not</u> treatment seeking clinical sample)
- 2014–2016 Behavioral Risk Factor Surveillance System
- *N= 2,221 TG and 523,080 CG respondents from 31 states and one territory.*
- Estimates of chronic health conditions, health-related quality of life, disabilities, health behaviors, and health utilization among TG vs CG

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Downing JM, Przedworski JM. Health of transgender adults in the U.S., 2014–2016. *Am J Prev Med*. 2018;55:336–344. doi:10.1016/j.amepre.46. 2018.04.045

Early Life → **Mid Life** → Later Life

Increased burden across comparison groups
Chronic conditions
Disability
Mental distress
Healthcare access
Increased odds of no exercise
Transgender males
Gender non-conforming males

Physical And Mental Health Of Older TGD Adults: An At-Risk And Underserved Population

Table 3. Associations Between Gender Identity and Key Health Indicators, Risk and Protective Factors, and Health Outcomes

	Total	Transgender	Nontransgender	Gender identity effect
Health care access				
Financial barrier to health service, %	7.46	21.84	6.41	OR = 1.80*
Fear of accessing health services, %	14.87	39.53	13.01	OR = 3.96***
Health-related behaviors				
Current smoking, %	9.16	14.97	8.74	OR = 1.25
Lack of physical activity, %	15.13	22.67	14.58	OR = 2.00**
Obesity, %	25.59	39.52	24.59	OR = 1.56*
Risk factors				
Internalized stigma, *M* (±*SD*)	1.47 (±0.57)	1.78 (±0.65)	1.45 (±0.55)	*b* = .42***
Victimization, *M* (±*SD*)	6.51 (±7.33)	10.99 (±10.05)	6.19 (±6.98)	*b* = 3.60***
Identity concealment, %	17.42	31.98	16.34	OR = 4.00***
Protective factors				
Social support, *M* (±*SD*)	3.09 (±.79)	2.88 (±.82)	3.11 (±.79)	*b* = −.24***
Social network size, *M* (±*SD*)	2.51 (±1.11)	2.86 (±1.09)	2.48 (±1.11)	*b* = .40***
Religious and spiritual activities, *M* (±*SD*)	2.03 (±4.65)	3.02 (±6.29)	1.96 (±4.49)	*b* = .71
Community belonging, *M* (±*SD*)	3.42 (±.76)	3.30 (±.87)	3.42 (±.75)	*b* = −.22**
Health outcomes				
Physical health, *M* (±*SD*)	69.68 (±22.41)	62.07 (±23.40)	70.24 (±22.24)	*b* = −5.54***
Disability, %	46.81	61.76	45.73	OR = 1.55*
Depressive symptomatology, *M* (±*SD*)	7.41 (±6.36)	10.34 (±7.29)	7.20 (±6.23)	*b* = 2.19***
Perceived stress, *M* (±*SD*)	1.25 (±.81)	1.56 (±.88)	1.22 (±.79)	*b* = .22**

Notes: OR = odds ratio; logistic or linear regression analyses were applied to examine the gender identity effect on key health indicators, risk and protective factors, and health outcomes, controlling for age, income, gender, and race/ethnicity.
*$p < .05$. **$p < .01$. ***$p < .001$.

- Cross sectional survey of adults > 50 years old identifying as LGBT
- "Caring and Aging with Pride" research project was conducted through collaboration with 11 community-based agencies across the United States serving LGBT older adults
- N=2,560
- Assess direct and indirect effects of gender identity on health outcomes

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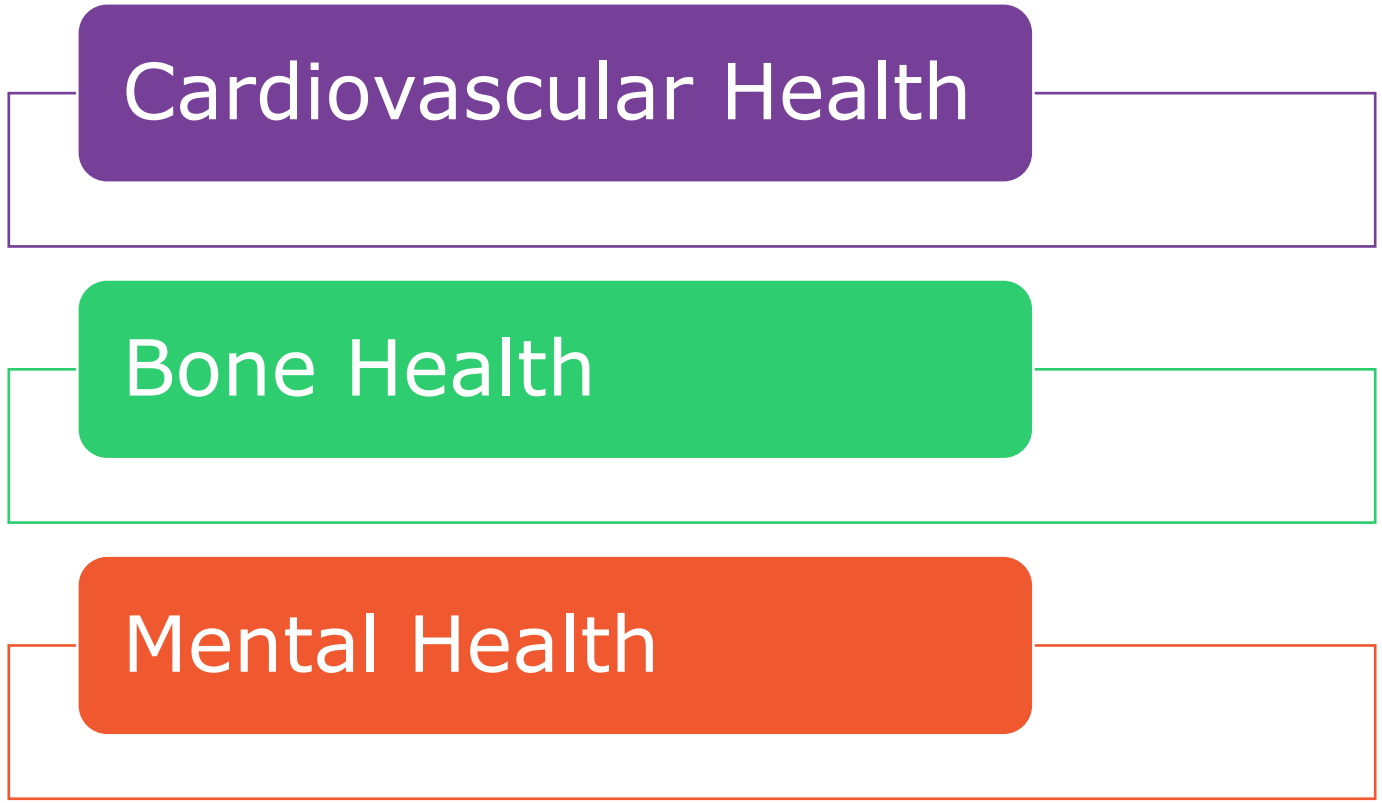
Early Life → Mid Life → **Later Life**

More likely to have barriers to healthcare access
Lack of physical activity
Increased obesity
Increased stigma and victimization
Decreased protective factors
Poorer health outcomes

Unique Health Needs Of TGD People



Cardiovascular Health In People Who Are Transgender And Gender Diverse

- Increased risk of poor cardiovascular outcomes
  - Myocardial infarction (TG men); venous thromboembolus (TG women)
- Importance of focusing on modifiable risk factors – including **physical activity**

  ➔ Need for **safe** and **welcoming** environment to participate in this protective health behavior

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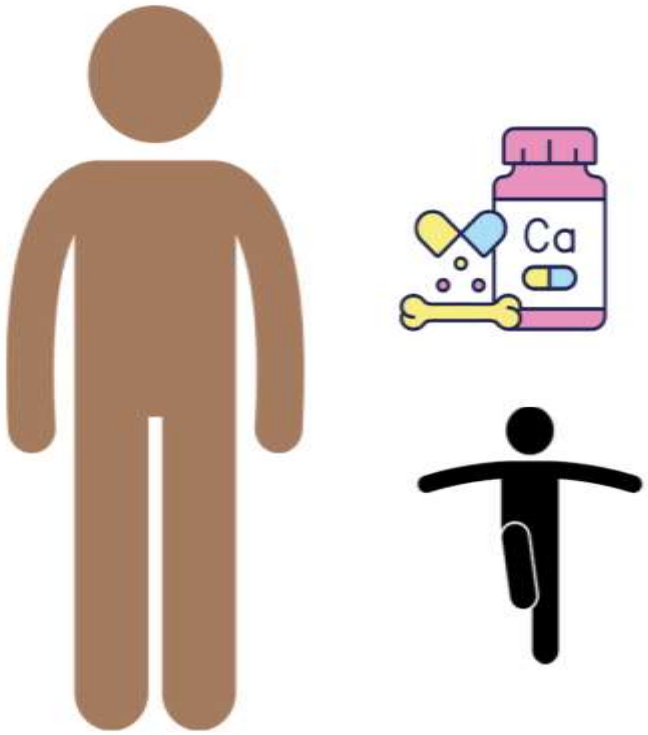
Streed et al. Assessing and Addressing Cardiovascular Health in People Who Are Transgender and Gender Diverse: A Scientific Statement From the American Heart Association. Circulation. 2021 Aug 10;144(6):e136-e148

Physical Activity And Bone Health



- Risk for low bone mineral density exists even <u>before</u> starting gender-affirming hormonal treatment (GAHT)
  - Low Vitamin D
  - Increased prevalence of eating disorders
  - Lower physical activity participation
    - *Muscle mass and impact promote bone health*
- Estrogen and testosterone are essential for <u>building</u> and <u>maintaining</u> bone strength

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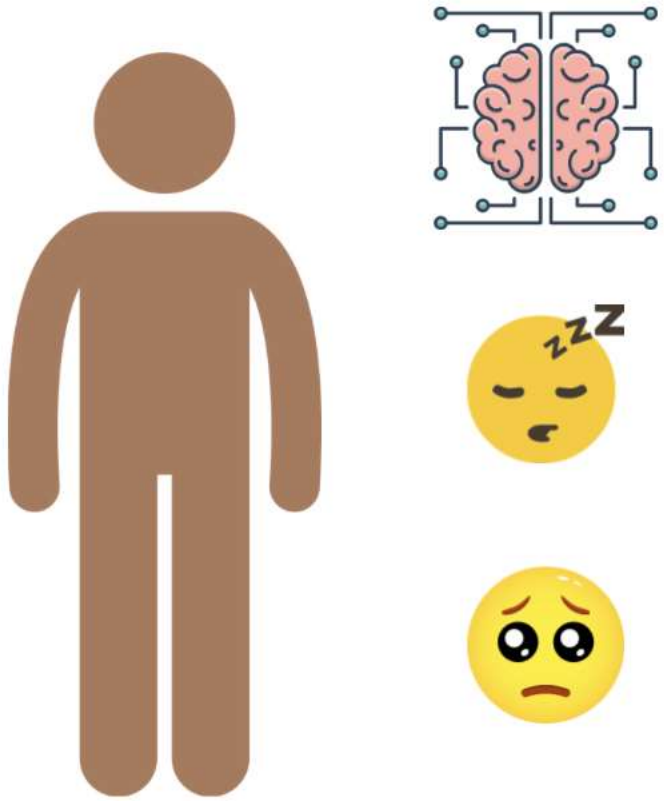
Lee JY, Finlayson C, Olson-Kennedy J, Garofalo R, Chan YM, Glidden DV, Rosenthal SM. Low Bone Mineral Density in Early Pubertal Transgender/Gender Diverse Youth: Findings From the Trans Youth Care Study. J Endocr Soc. 2020 Jul 2;4(9)
Wiepjes CM, den Heijer M, T'Sjoen GG. Bone health in adult trans persons: an update of the literature. Curr Opin Endocrinol Diabetes Obes. 2019 Dec;26(6):296-300. doi: 10.1097/MED.0000000000000502. PMID: 31573999.

Physical Activity And Mental Health



- Increased rates of depression, anxiety, PTSD among TGD individuals
  - *Compounded by stigma and social isolation*

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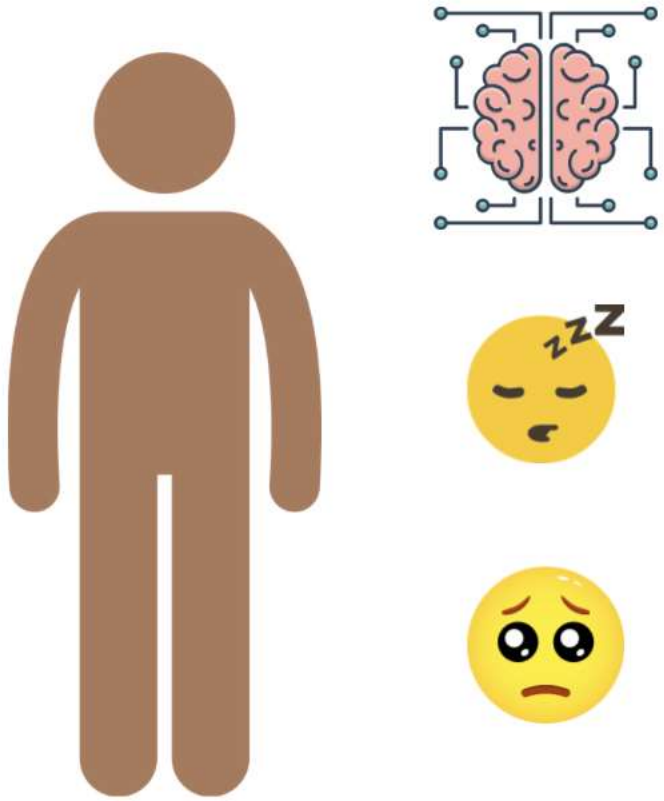
Bockting WO, Miner MH, Swinburne Romine RE, Hamilton A, Coleman E. Stigma, mental health, and resilience in an online sample of the US transgender population. Am J Public Health. 2013 May;103(5):943-51.

Physical Activity And Mental Health

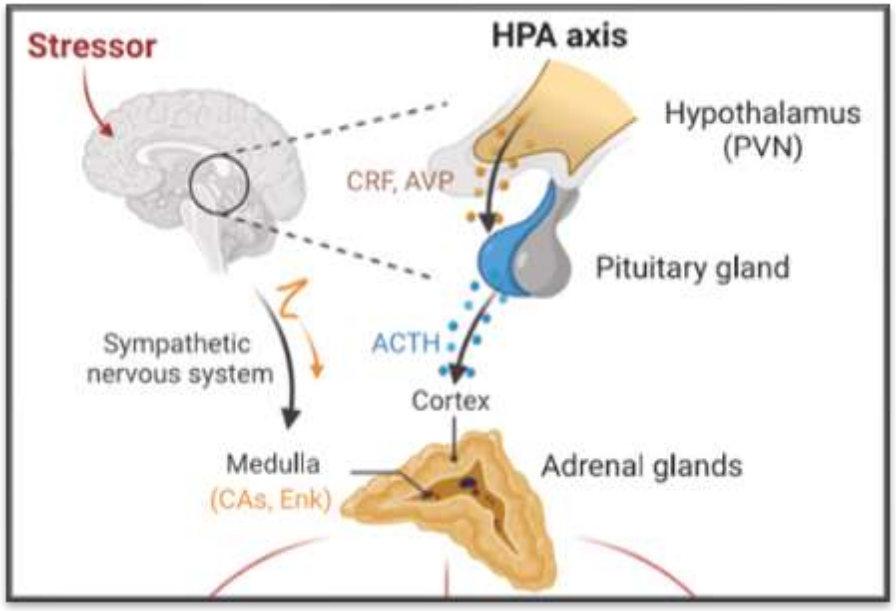


- Non-pharmacologic treatment for poor sleep
  - Improvement in subjective sleep quality in middle-older age adults with sleep problems (Yang, 2012)
  - 4 months of aerobic exercise improved sleep quality, reduced daytime sleepiness and depression in adults with chronic insomnia (Reid, 2010)

Bockting WO, Miner MH, Swinburne Romine RE, Hamilton A, Coleman E. Stigma, mental health, and resilience in an online sample of the US transgender population. Am J Public Health. 2013 May;103(5):943-51.

Non-pharmacologic Treatment For Anxiety

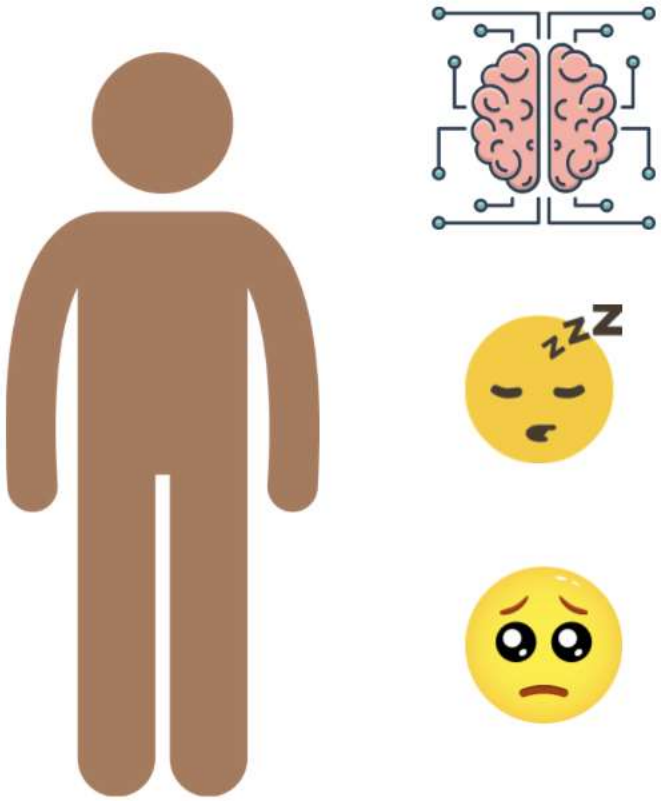
Biological Mechanisms	Psychological Mechanisms
Hypothalamic-Pituitary-Adrenal Axis	Anxiety, sensitivity, and exposure
Monoamine system	Self-efficacy
Opioid system	Distraction
Neurotropic factors	
Neurogenesis	



Kim, E.J., Kim, J.J. Neurocognitive effects of stress: a metaparadigm perspective. *Mol Psychiatry* (2023).

Anderson E, Shivakumar G. Effects of exercise and physical activity on anxiety. Front Psychiatry. 2013 Apr 23;4:27.

Physical Activity And Mental Health



- 92 studies, 4310 participants (Depression) ➔ Reduction by medium effect (SMD -0.50, 95%CI −0.93 to −0.06)
- 305 studies, 10,755 participants (Anxiety) ➔ Reduction by a small effect (SMD = −0.38; 95% CI: −0.66 to −0.11)

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Rebar AL, Stanton R, Geard D, Short C, Duncan MJ, Vandelanotte C. A meta-meta-analysis of the effect of physical activity on depression and anxiety in non-clinical adult populations. Health Psychol Rev. 2015;9(3):366-78.

What Kind Of Physical Activity For Mental Health?

Table 2. Associations between pedometer steps/day, self-reported physical activity, and depression[a]

	Women				Men			
	n[b]	% depression	PR[c]	95% CI	n[b]	% depression	PR[d]	95% CI
Steps/day								
<5000	58	22.41	1.00	ref	63	4.76	1.00	ref
5000–7499	245	15.10	0.76	0.45, 1.30	227	5.73	0.94	0.27, 3.25
7500–9999	291	9.28	0.52	0.29, 0.94	212	8.02	1.19	0.36, 3.88
10,000–12,499	183	7.10	0.43	0.21, 0.87	151	5.30	0.72	0.20, 2.62
12,500+	92	6.52	0.42	0.17, 1.05	113	4.42	0.48	0.11, 2.01
p_{trend}				**0.005**				0.18
Physical activity (IPAQ)								
Leisure (hours/week)[e]								
0	241	16.60	1.00	ref	230	6.96	1.00	ref
>0 and <1.25	183	16.94	0.94	0.62, 1.43	164	5.49	0.83	0.38, 1.80
≥1.25 and <2.5	172	8.14	0.55	0.31, 0.98	175	8.00	1.08	0.58, 2.03
≥2.5 and <4.5	224	8.04	0.55	0.32, 0.92	155	3.23	0.44	0.17, 1.19
4.5+	204	8.33	0.56	0.33, 0.96	184	3.80	0.58	0.24, 1.39
p_{trend}				**0.003**				0.13
Work (hours/week)[e]								
0	563	10.30	1.00	ref	334	5.39	1.00	ref
>0 and <1.5	116	10.34	1.30	0.72, 2.36	137	4.38	1.00	0.40, 2.53
≥1.5 and <5	111	12.61	1.38	0.80, 2.37	138	5.80	1.01	0.43, 2.37
≥5 and <10	111	12.61	1.41	0.81, 2.45	149	5.37	0.93	0.38, 2.30
10+	123	17.89	1.96	1.24, 3.09	150	7.33	1.11	0.48, 2.58
p_{trend}				**0.005**				0.87

- For those identifying as female:
  - **Protective** relationship of leisure-time physical activity
  - **Increased risk** of depression for work physical activity

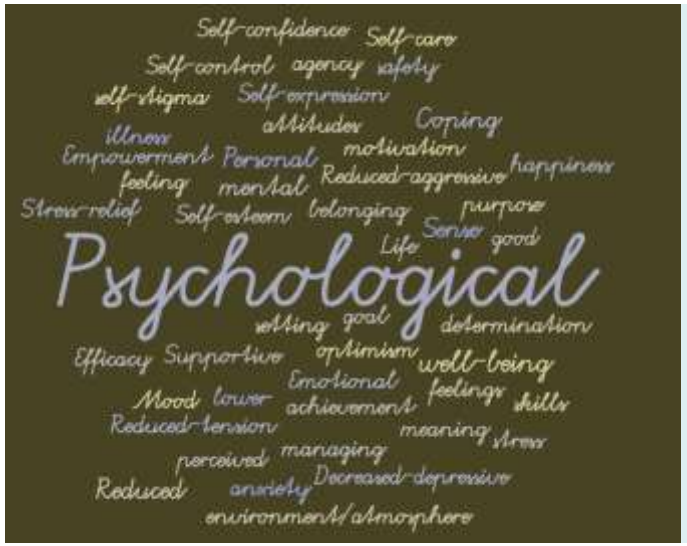
McKercher CM, Schmidt MD, Sanderson KA, Patton GC, Dwyer T, Venn AJ. Physical activity and depression in young adults. Am J Prev Med. 2009 Feb;36(2):161-4.

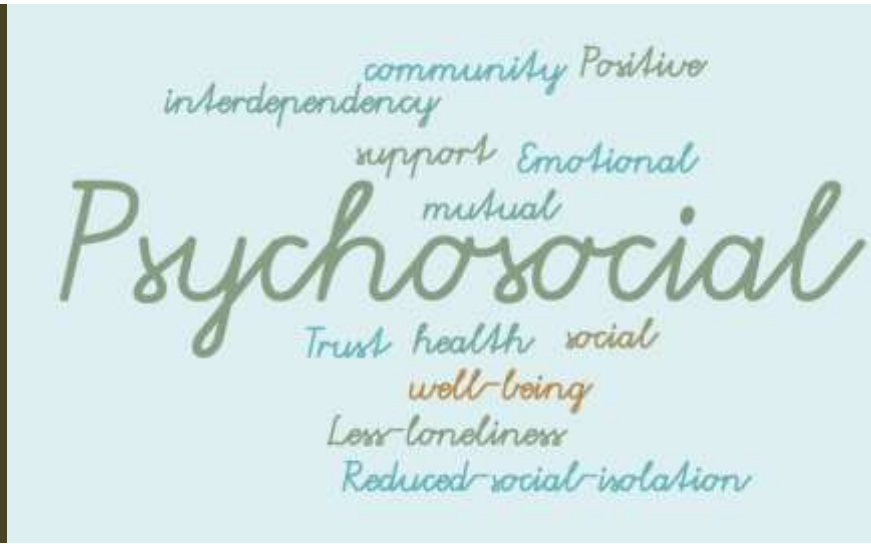
Social And Psychological Health Outcomes Of Team Sport Participation In Adults

Conclusion:

"Improved social and psychological health independent of the type of team sport, age, somatic, or mental health problems".

"…**precautions** must be taken with regard to their inherent **competitive** nature."





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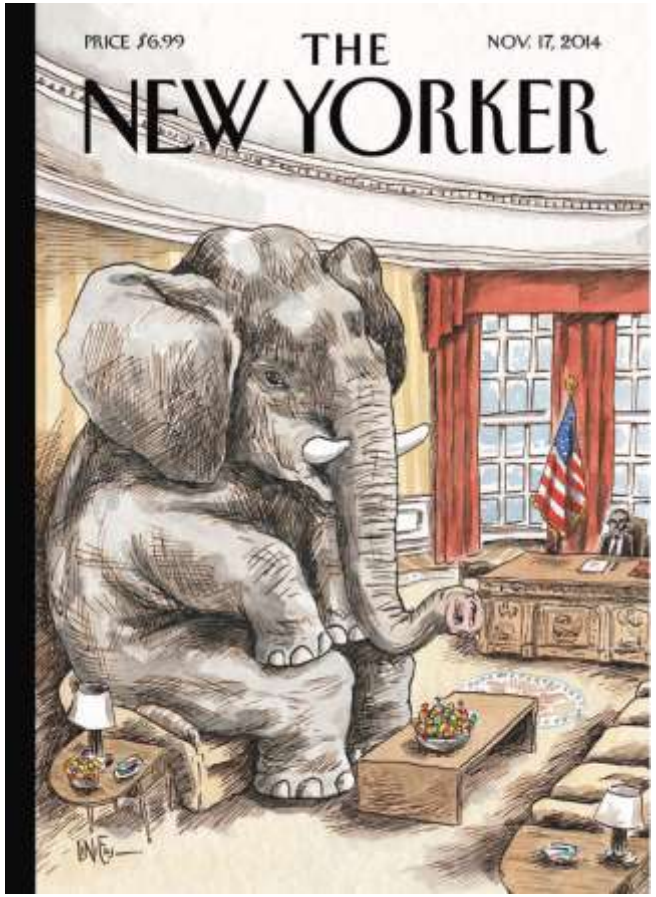
Andersen MH, Ottesen L, Thing LF. The social and psychological health outcomes of team sport participation in adults: An integrative review of research. Scand J Public Health. 2019 Dec;47(8):832-850.

Social-emotional Benefits Of PA

JAMA Pediatrics | Original Investigation

Association of Team Sports Participation With Long-term Mental Health Outcomes Among Individuals Exposed to Adverse Childhood Experiences

Molly C. Easterlin, MD; Paul J. Chung, MD, MS; Mei Leng, MD, MS; Rebecca Dudovitz, MD, MSHS



- Physical activity is <u>important</u> to TGD individuals
- Current climate has <u>many</u> barriers to implementing these recommendations for those we serve

Barriers And Facilitators To PA Among TGD Individuals

Theme	Representative Quote
Changing rooms	'I just don't want to have to deal with deciding which locker room to go into – so I don't go the gym anymore.' (Herrick & Duncan, 2020)
Medical transitions	'Yes, I am proud of it [his body], now I dare to show it to people.' (Elling-Machartzki 2017: 264) 'I have clear scars on my chest...I also see people looking. But I think like, "Fine, just look then."' (Elling-Machartzki 2017)
	'... that became a huge problem because you can't workout in a binder and I felt acutely uncomfortable.' (Herrick & Duncan 2018)
Sports environments and activities	'I don't really fit into a bracket where I could play for a team anymore so I tend not to bother.' (Jones et al. 2017) 'But sport is very clearly either male or female.' (Stewart et al. 2020)
	'Peter had only joined an LGBT wrestling group just prior to his transition but felt very much supported and at-home in the group.' (Elling-Machartzki 2017) 'Trans spaces are precious and needed.' (Herrick & Duncan 2020) 'If I am doing training in my room, I can I usually just do it in my loungewear so I don't have to worry about it. It's a lot more comfortable' (Jones et al. 2017).

Holder, J., Morris, J., & Spreckley, M. (2022). Barriers and Facilitators for Participation in Physical Activity in the Transgender Population: A Systematic Review. *Physical Activity and Health*, 6(1), pp. 136–152.

Barriers And Facilitators To PA Among TGD Individuals (continued)

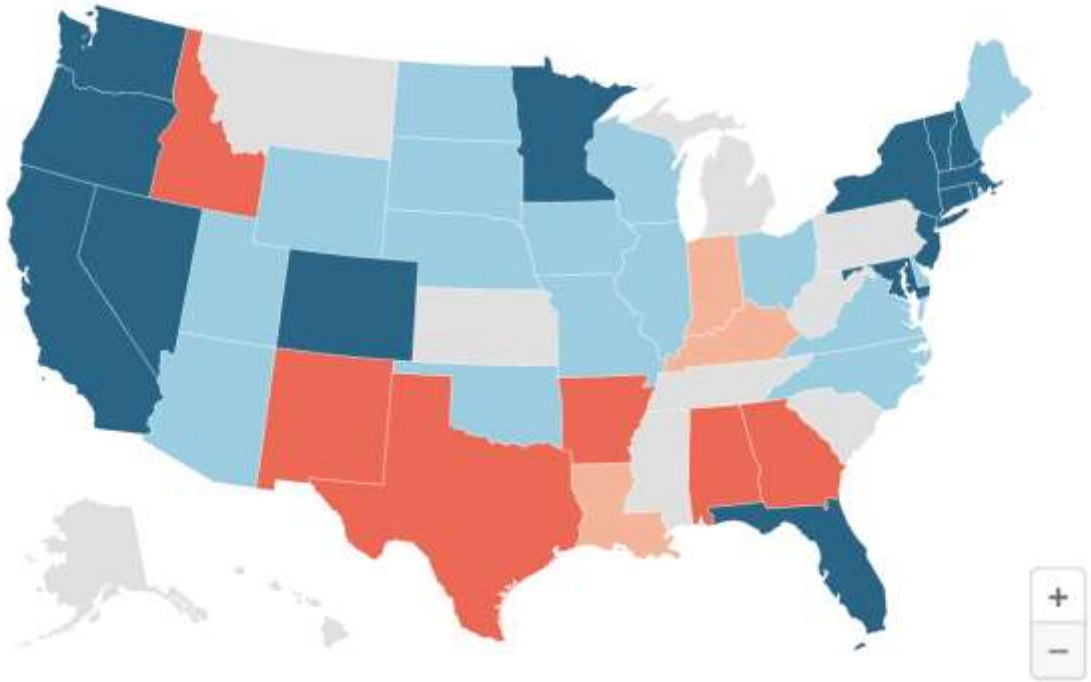
Theme	Representative Quote
Relationships and social support	'Training is ok because my teammates and coaches are great.' (Stewart et al. 2020: 83)
	'Teachers turned a blind eye to both subtle and aggressive forms of homophobia, transphobia, and harassment.' (Greenspan et al. 2019: 17–18)
Physical and psychological safety	"I am gawked at, misgendered, and face physical violence." (Herrick & Duncan 2020: 234)
	"I worry about being sexually assaulted, being in such a vulnerable position" (Herrick & Duncan 2020: 235)
POLICY	

Holder, J., Morris, J., & Spreckley, M. (2022). Barriers and Facilitators for Participation in Physical Activity in the Transgender Population: A Systematic Review. *Physical Activity and Health*, 6(1), pp. 136–152.

Policy Barriers To Sports Participation

State athletic association policies regarding transgender, nonbinary, and gender-nonconforming student participation in school sports, by state

Fully-inclusive transgender policy | Transgender participation allowed with restrictions | Surgery-required guidance | Transgender-exclusive guidance | No state policy



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VIEWPOINT

The Medical Implications of Banning Transgender Youth From Sport Participation

JAMA Network

JAMA Pediatrics

TGD youth. The past year has seen widespread legislative efforts to exclude TGD youth from organized sports, even though organized sports represent one of the most important opportunities for youth to engage in regular physical activity. Nine states have passed legislation banning TGD youth from participating in athletic teams concordant with their gender, and more bills are currently under consideration.[2] Notably, collegiate and professional athletic associations have not supported banning transgender athletes from participation in sports. In fact, the recent Olympic games featured several transgender athletes. Restricting sports participation threatens to worsen physical activity engagement among TGD youth, who already have lower rates of exercise than their cisgender peers.[3]

Adverse Impact on:

- Cardiovascular Health
- Bone Health
- Mental Health
- **Overall health and wellbeing**

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Barrera E, Millington K, Kremen J. The Medical Implications of Banning Transgender Youth From Sport Participation. JAMA Pediatr. 2022 Mar 1;176(3):223-224.

Barriers And Facilitators To PA Among TGD Individuals

The Levels and Predictors of Physical Activity Engagement Within the Treatment-Seeking Transgender Population: A Matched Control Study

Bethany Alice Jones, Emma Haycraft, Walter Pierre Bouman, and Jon Arcelus

Human Kinetics
ORIGINAL RESEARCH

Journal of Physical Activity and Health, 2018, 15, 99-107
https://doi.org/10.1123/jpah.2017-0298

Study Aims:

1. Amount of PA that treatment seeking transgender people engage in, compare to cisgender people
2. Differences in PA depending on GAHT
3. What factors predict PA in treatment seeking TG people

Study Methods:

- UK-based sample, 360 TG people, 314 cisgender people
- Questionnaires addressing PA, anxiety symptoms, depression symptoms, body satisfaction, transphobia

Jones BA, Haycraft E, Bouman WP, Arcelus J. The Levels and Predictors of Physical Activity Engagement Within the Treatment-Seeking Transgender Population: A Matched Control Study. J Phys Act Health. 2018 Feb 1;15(2):99-107.

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Summary of Findings:

1. Overall, less PA vs cisgender people
   - TG males – less PA than CG males
   - TG females – no difference vs CG females
2. Gender Affirming Hormone Therapy (GAHT)
   - More PA
   - Body satisfaction was best predictor of PA participation
3. Those not on GAHT
   - Self-esteem was best predictor of PA

Importance of GAHT as indirect step to increase PA engagement among treatment-seeking individuals

Jones BA, Haycraft E, Bouman WP, Arcelus J. The Levels and Predictors of Physical Activity Engagement Within the Treatment-Seeking Transgender Population: A Matched Control Study. J Phys Act Health. 2018 Feb 1;15(2):99-107.

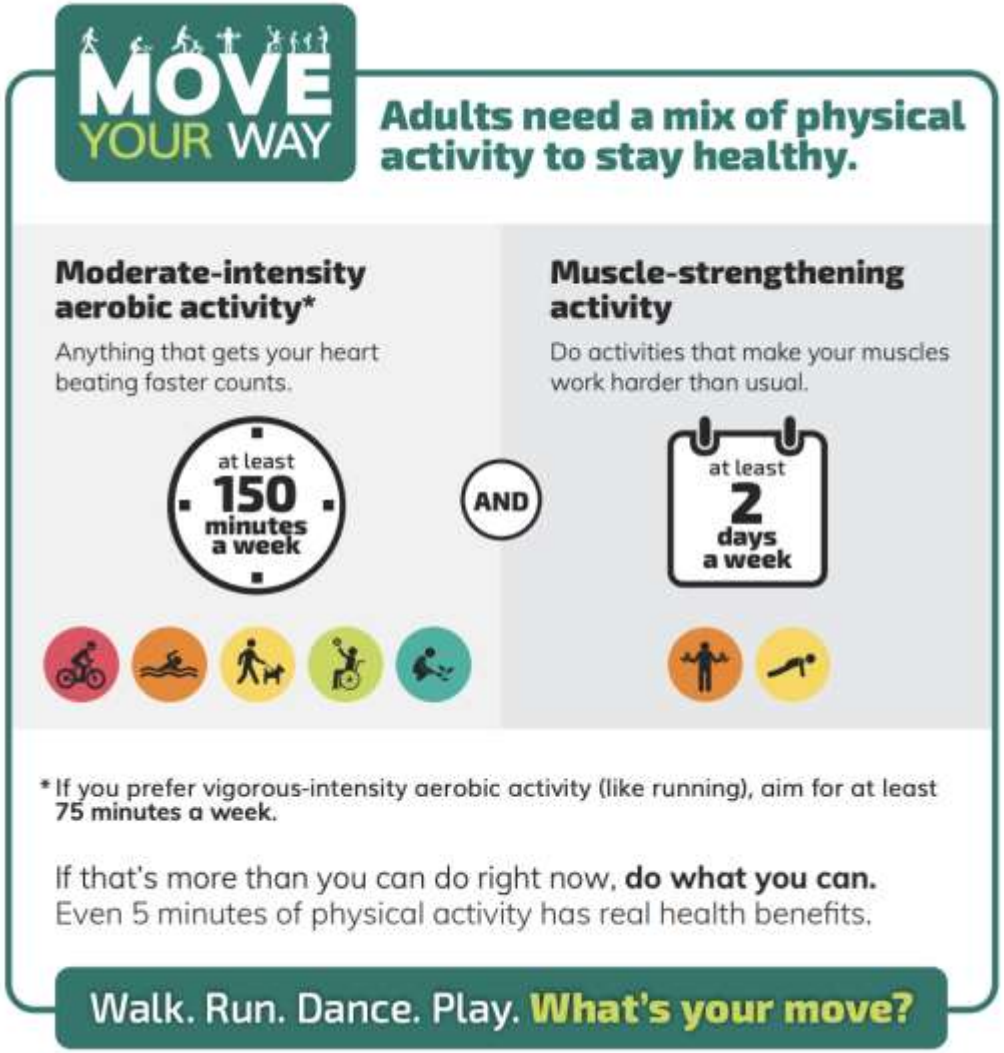
In Summary

1. Physical activity is important for all (including TGD) people
2. Unique barriers and facilitators exist among the TGD population for both overall physical activity as well as team sports

How to promote and facilitate PA within this population?

Physical Activity Recommendations

Physical Activity Guidelines for Americans
2nd edition



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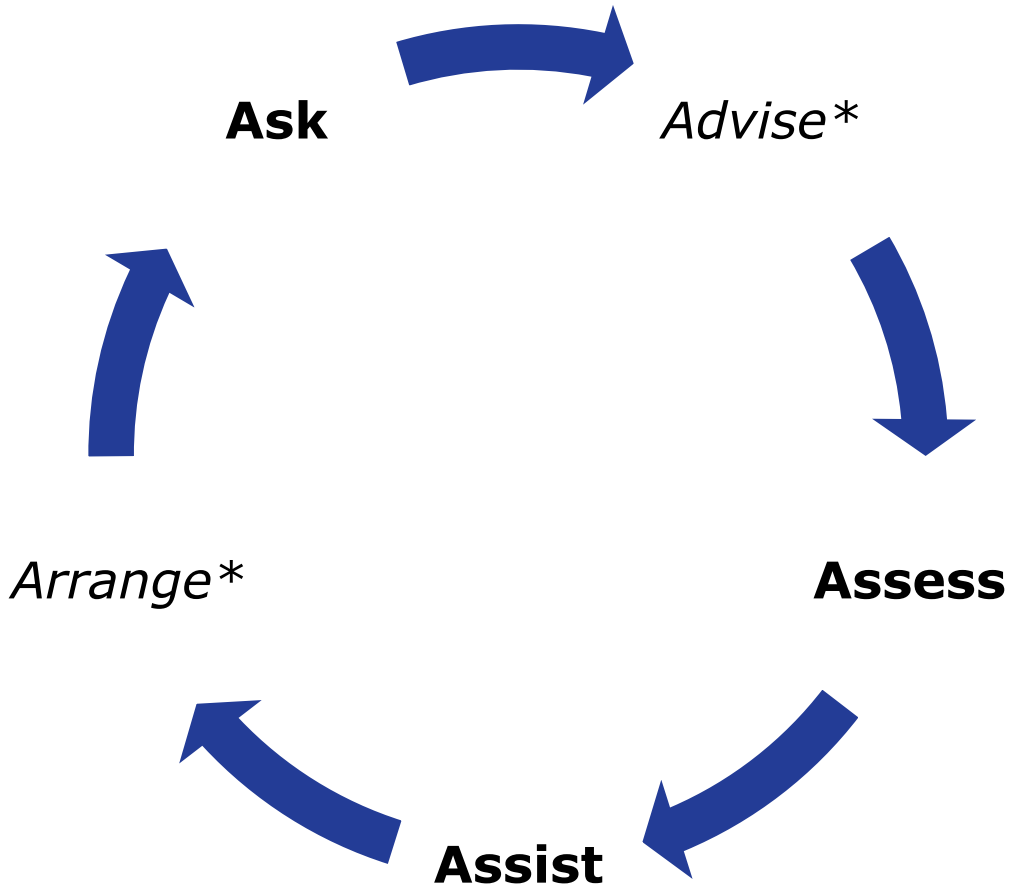
What Does This Look Like?

INTENSITY	DESCRIPTION	EXAMPLES
Light	Easily able to carry on a conversation No sweating No shortness of breath	Household chores Walking Playing catch
Moderate	Some difficulty talking Feel warm Light sweating/shortness of breath	Jogging/fast walking Tag Yardwork
Vigorous	Unable to talk Short of breath Red Face, Sweating	Manual Labor Running Skipping rope Skiing, skating
Muscle Strengthening	Pushing/pulling bodyweight or object	Climbing, Resistance training
Bone Strengthening	Increased impact	Running Jumping

Lobelo F, Muth ND, Hanson S, et al. AAP COUNCIL ON SPORTS MEDICINE AND FITNESS, AAP SECTION ON OBESITY. Physical Activity Assessment and Counseling in Pediatric Clinical Settings. Pediatrics. 2020;145(3): e20193992

A Practical Approach To Physical Activity Counseling



https://www.ahrq.gov/prevention/guidelines/tobacco/5steps.html

A Practical Approach To Physical Activity Counseling

Ask

- Current physical activity habits
- Frequency, duration, intensity, enjoyment

Assess

- Physical literacy
- Any gap between current and recommended physical activity levels

Assist

- Identify patient-centered opportunities and goals
- Start small!
- Follow-up

Lobelo F, Muth ND, Hanson S, et al. AAP COUNCIL ON SPORTS MEDICINE AND FITNESS, AAP SECTION ON OBESITY. Physical Activity Assessment and Counseling in Pediatric Clinical Settings. Pediatrics. 2020;145(3): e20193992

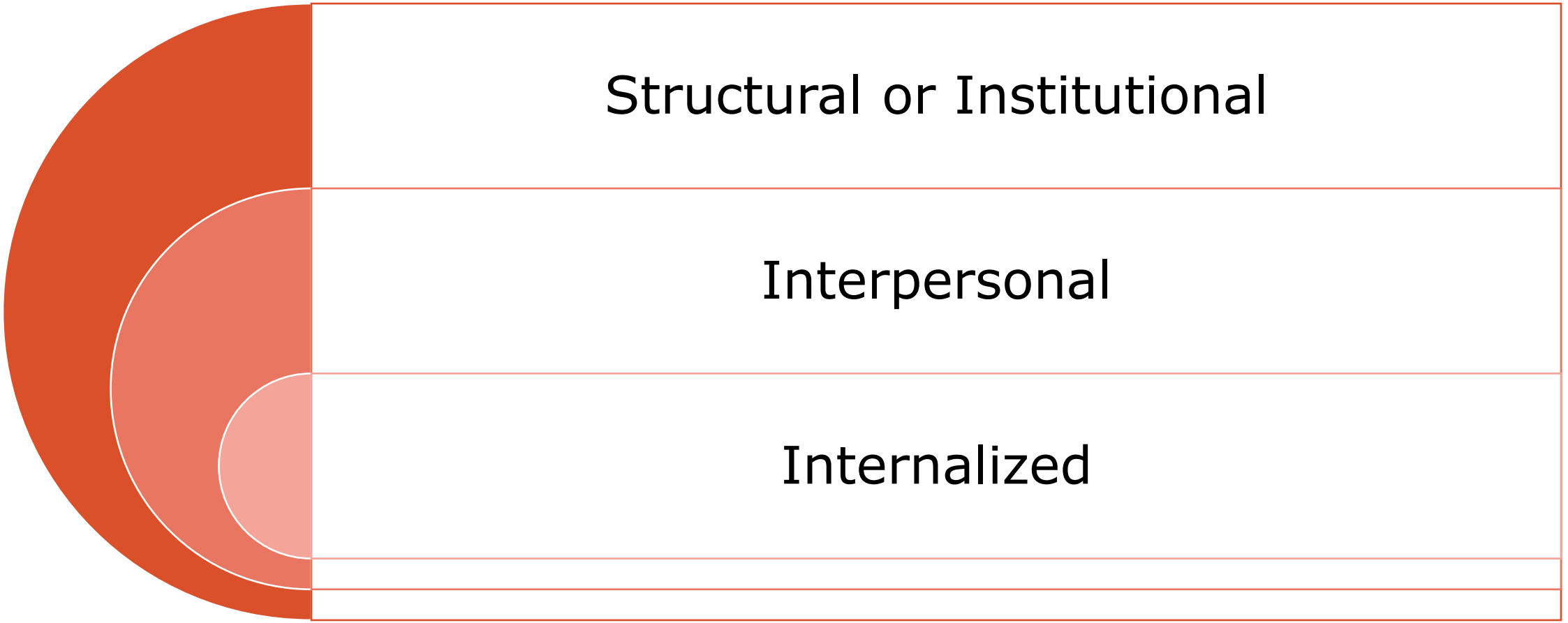
Physical Literacy

"The ability, confidence, and desire to be physically active for life"

- **Confidence** and **self-efficacy** in ability to **enjoy** physical activity
- Rooted in **early, positive** experiences with physical play

Lobelo F, Muth ND, Hanson S, et al. AAP COUNCIL ON SPORTS MEDICINE AND FITNESS, AAP SECTION ON OBESITY. Physical Activity Assessment and Counseling in Pediatric Clinical Settings. Pediatrics. 2020;145(3): e20193992

Levels Of Stigma As Targets for Intervention



A Practical Approach To Physical Activity Counseling

Level of Stigma	Strategies
Structural/Institutional	• Gender neutral changing rooms • Free choice on gendered uniforms • Effective implementation of policies re: bullying and harassment
Interpersonal	• Consider individual, home-based exercise • LGBTQ+ available services • Peer-mentoring
Internalized	• Self-efficacy, confidence, positivity within TGD communities • Importance of medical transition relating to participation in PA • Reduce delays to treatment

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Resources

- Transgender Inclusion in Physical Education and Sports
  - https://www.shapeamerica.org/standards/guidelines/Transgender/default.aspx
- Resource for students, athletes, coaches, and administrators to find information about trans inclusion in athletics at various levels of play
  - https://www.transathlete.com/
- "Mission to end homophobia and transphobia in sports and to activate the athletic community to exercise their leadership to champion LGBTQIA+ equality."
  - https://www.athleteally.org/

Revisiting Our Objectives

- Describe the impact that stigma and discrimination have on TGD people and the additional barriers this creates for physical and mental well-being.
- Explain the potential benefits of physical activity and sports participation for TGD people.
- Identify the current legal, societal, and systemic barriers that discourage or ban TGD people from participation in physical activities and sports and the negative mental health impact that this causes.
- Apply best practices for engaging in discussion about physical activity with TGD patients, connecting them to affirming sports-related resources and communities to facilitate their engagement in physical activity.

Michelle's Story

- Michelle Tat, PhD
- Guest Speaker
- Pronouns: she/her