

Physical Activity in Adult Survivors of Childhood Cancer

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Living Well With and Beyond Cancer
Conference 2020



Agenda

- What is Physical Activity?
- Benefits of Physical Activity
- Physical Activity Recommendations
- How active are survivors of Childhood Cancer?
- Factors affecting Physical Activity
- Boosting activity levels





Physical Activity

Benefits of Physical Activity

Health benefits of physical activity – summary of evidence

(US Physical Activity Guidelines Advisory Committee, 2008)

Children and young people	<p>Strong evidence of:</p> <ul style="list-style-type: none">better cardio-respiratory and muscular fitnessstronger bonesbetter cardiovascular and metabolic healthhealthier body fat composition <p>Some evidence of:</p> <ul style="list-style-type: none">reduced symptoms of anxiety and depression
All adults (including adults with disabilities and older adults)	<p>Strong evidence of:</p> <ul style="list-style-type: none">better cardio-respiratory and muscular fitnessless weight gainmore weight loss – combined with eating fewer caloriesbetter weight maintenance after weight losslower risk of early deathlower risk of strokelower risk of coronary heart diseaselower risk of high blood pressurelower risk of unhealthy blood lipid profilelower risk of type 2 diabeteslower risk of metabolic syndromelower risk of colon and breast cancerfewer fallsreduced levels of depressionbetter cognitive function in older adults <p>Some evidence of:</p> <ul style="list-style-type: none">lower risk of hip fracturelower risk of lung cancerlower risk of endometrial cancerstronger bone densitybetter sleep qualityreduced abdominal fat

Incidence of chronic health conditions amongst childhood cancer survivors

Oeffinger KC et al, NEJM 2006;355;15:1572-1582

Hudson MM et al, JAMA. 2013 June 12; 309(22): 2371–2381.

Table 2. Cancer Survivors and Siblings with a Chronic Health Condition, According to the Severity Score.*

Health Condition	Survivors (N= 10,397)	Siblings (N= 3034)
	<i>no. (%)</i>	
No condition	3887 (37.4)	1917 (63.2)
Grade 1 (mild)	1931 (18.6)	610 (20.1)
Grade 2 (moderate)	1635 (15.7)	349 (11.5)
Grade 3 (severe)	2128 (20.5)	128 (4.2)
Grade 4 (life-threatening or disabling)	653 (6.3)	30 (1.0)
Grade 5 (fatal)	163 (1.6)	NA†
Any condition‡		
Grades 1–4	6482 (62.3)	1117 (36.8)
Grade 3 or 4	2858 (27.5)	158 (5.2)
Multiple health conditions		
≥2	3905 (37.6)	397 (13.1)
≥3	2470 (23.8)	163 (5.4)

Table 3. Relative Risk of Selected Severe (Grade 3) or Life-Threatening or Disabling (Grade 4) Health Conditions among Cancer Survivors, as Compared with Siblings.

Condition	Survivors (N= 10,397)	Siblings (N= 3034)	Relative Risk (95% CI)
	<i>percent</i>		
Major joint replacement*	1.61	0.03	54.0 (7.6–386.3)
Congestive heart failure	1.24	0.10	15.1 (4.8–47.9)
Second malignant neoplasm†	2.38	0.33	14.8 (7.2–30.4)
Cognitive dysfunction, severe	0.65	0.10	10.5 (2.6–43.0)
Coronary artery disease	1.11	0.20	10.4 (4.1–25.9)
Cerebrovascular accident	1.56	0.20	9.3 (4.1–21.2)
Renal failure or dialysis	0.52	0.07	8.9 (2.2–36.6)
Hearing loss not corrected by aid	1.96	0.36	6.3 (3.3–11.8)
Legally blind or loss of an eye	2.92	0.69	5.8 (3.5–9.5)
Ovarian failure‡	2.79	0.99	3.5 (2.7–5.2)

* For survivors, major joint replacement was not included if it was part of cancer therapy.

† For both groups, this category excludes basal-cell and squamous-cell carcinoma (grade 2). For siblings, this category includes a first cancer.

‡ Values are for women only.

Types of Exercise

Aerobic
Anaerobic

Intensity: Light

Moderate

Vigorous

Very vigorous



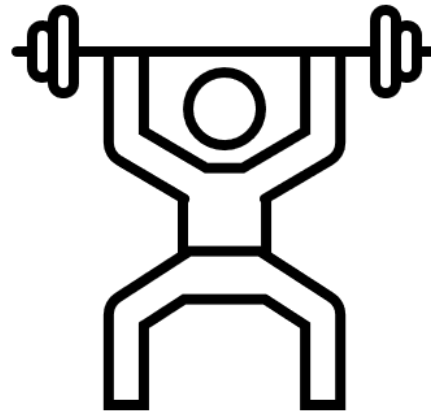
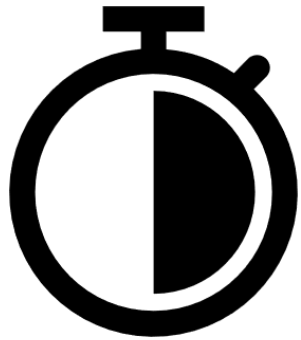
Bone and Muscle Strengthening



Balance and Falls prevention



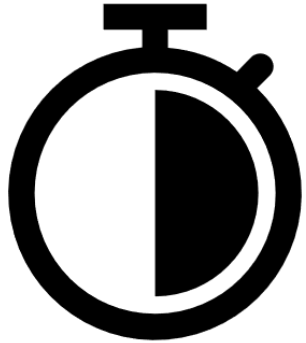
Physical Activity Recommendations



U.S. Department of Health and Human Services. Physical Activity Guidelines for Americans. 2nd ed. Washington, DC: U.S. Department of Health and Human Services; 2018.

World Health Organization. Global Recommendations on Physical Activity for Health. Geneva, Switzerland: World Health Organization; 2010.

Physical Activity Recommendations



>**150** minutes per week
moderate intensity

or

>**75** minutes per week
vigorous intensity

or

Combination

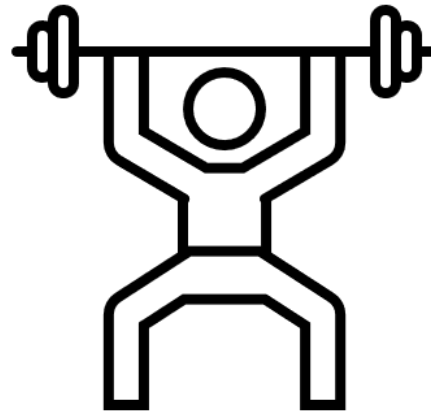


Additional health benefits:
300 minutes per week
moderate intensity

Physical Activity Recommendations

Muscle-strengthening activities
involving major muscle groups
2+ days a week.

Balance and falls prevention
3+ days per week.



Physical Activity Recommendations



Limit sedentary time.

Replace sedentary time with physical activity of **any intensity** (including light intensity).

Physical Activity levels
in Adult Survivors
of Childhood Cancer
in Ireland?





SPÓRT ÉIREANN
SPORT IRELAND

PHYSICAL ACTIVITY

ROUGHLY 1.7 MILLION IRISH ADULTS REGULARLY PARTICIPATE IN SPORT

TOP 5 ACTIVITIES

46%

Regularly participate
in sport which is roughly
1.7 million people

150,000

additional participants
since 2017

34%

Meet the National Physical
Activity Guidelines through
participating in at least 30 mins
of moderate or greater
intensity physical activity
at least 5 times in the
previous 7 days



9%

Swimming



16%

Personal
Exercise



7%

Running



4%

Cycling



3%

Soccer/Yoga/
Dancing



45%

Regularly walk
for transport



66%

Regularly walk
for recreation



10%

Cycle for
transport

PHYSICAL ACTIVITY

ROUGHLY 1.7 MILLION IRISH ADULTS REGULARLY PARTICIPATE IN SPORT

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Meet the National Physical
Activity Guidelines through
participating in at least 30 mins
of moderate or greater
intensity physical activity
at least 5 times in the
previous 7 days

12%

Are Sedentary, i.e. did not
participate in any of the 4
types of activity in the
past 7 days



66%

Regularly walk
for recreation



45%

Regularly walk
for transport



10%

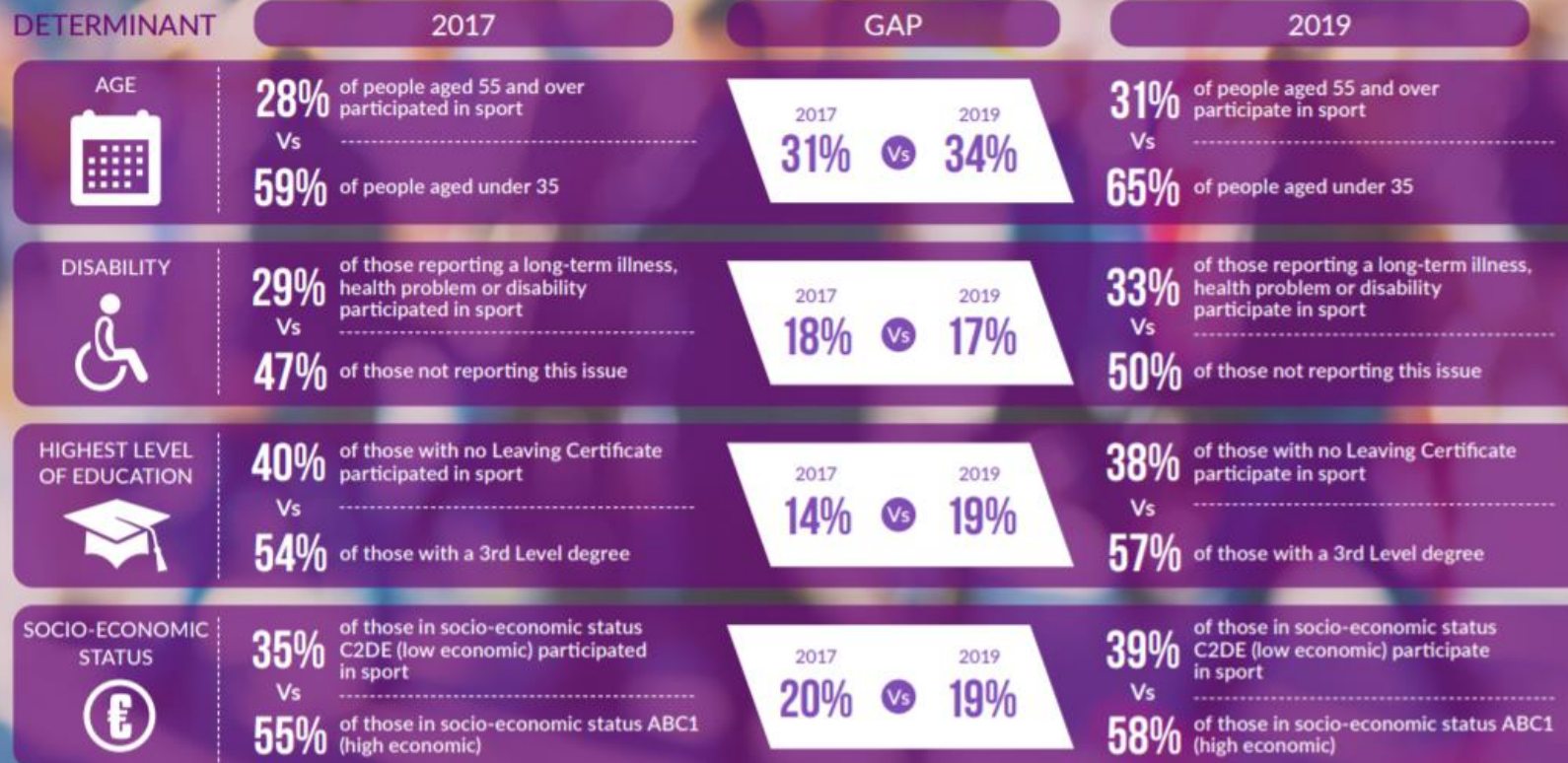
Cycle for
transport

3%

Soccer/Yoga/
Dancing

SOCIAL GRADIENTS IN SPORTS PARTICIPATION

PERSISTENT AGE AND SOCIAL GRADIENTS EXIST IN SPORTS PARTICIPATION



IRISH SPORTS MONITOR 2019

SUMMARY OF FINDINGS

Ipsos MRBI

Factors affecting Sports Participation in Ireland

Physical Activity Behaviours in Survivors of Childhood Cancer



**Physical
Activity**

52%

of cancer survivors reported not meeting CDC guidelines for physical activity compared with 47% of siblings (Ness 2009).

44%

more likely to not meet CDC recommendations for physical activity when compared with the general U.S. population (Florin 2007).

50% - 80%

of adolescent (11–18 y) and young adult (19–25 y) survivors of childhood cancer self reported non adherence to CDC guidelines for physical activity (Zhang 2015).



**Inactivity
(Sedentary)**

23%

of cancer survivors reported inactive lifestyle compared with 14% of siblings. Medulloblastoma and osteosarcoma survivors reported highest levels of inactive lifestyle (35%, 27% respectively) (Ness 2009).

74%

more likely to be inactive (no leisure-time physical activity in the past month) when compared with the general U.S. population (Florin 2007).



Factors which influence Physical Activity in Childhood Cancer Survivors





29 LOCAL SPORTS PARTNERSHIPS

345,190

people participated in 949 locally delivered participation initiatives



13,644

females took part in 74 local Women in Sport programmes



18,000

took part in the Operation Transformation 5K Fun Run and Nationwide Walks



13,063

people took part in the Sport Ireland Cycle Series



2,069 CLUBS/GROUPS WERE SUPPORTED BY LSPs

ALMOST €20m

WAS INVESTED IN THE LSP NETWORK
(This includes benefit-in-kind funding)



LSPs planned and delivered 237 training and education courses; 14,234 people participated on these training courses



7,009 completed 416 Safeguarding Courses

22 LSPs received funding for Community Sports Development Officers in 2017



Funding directly from Sport Ireland, €3.8m, accounted for 29.1% of total LSP funding in 2017



Additional Sport Ireland funding was also allocated for specific projects under the Dormant Accounts Scheme to the value of €2.5m or 12.7% overall



Of the total funding amount of €3.8m allocated to UDCGs & CYPSCs by Healthy Ireland through Pobal, Sport Ireland's Local Sports Partnerships supported the delivery of projects of over €1.1m

List of References

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- Florin TA, Fryer GE, Miyoshi T, Weitzman M, Mertens AC, Hudson MM, Sklar CA, Emmons K, Hinkle A, Whitton J, et al. Physical inactivity in adult survivors of childhood acute lymphoblastic leukemia: a report from the Childhood Cancer Survivor Study. *Cancer Epidemiol Biomarkers Prev* 2007;16:1356–63.
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