

Physical Activity Writing Group

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Approach to Addressing Topic Area

1. DGAC agreed to use existing systematic reviews and reports to address physical activity topic.
2. Identified Physical Activity Guidelines for Americans (PAG) reports to serve as primary sources of evidence.
3. Reviewed key findings of PAG reports.
4. Extracted key findings and methodology considerations from each PAG report.

Approach to Addressing Topic Area (cont.)

5. Developed research questions.
6. Identified key findings from PAG reports to answer questions.
7. Determined strength of evidence.
8. Drafted conclusion statements to answer questions.

Key Topic Areas

- Physical activity and health outcomes
 - General population
 - Children
 - Adults, including older adults
- Physical activity dose
 - Children
 - Adults, including older adults
 - Older adults
- Physical activity interventions
 - Children

Physical Activity and Health Outcomes in the General Population

- What is the relationship between physical activity, body weight, and other health outcomes?
- What is the relationship between physical activity and cardiorespiratory health?
- What is the relationship between physical activity and metabolic health?
- What is the relationship between physical activity and musculoskeletal health?

Source of Evidence:

Physical Activity Guidelines Advisory Committee Report, 2008

Physical Activity and Health Outcomes in the General Population

Draft Conclusion Statement:

- Being physically active is one of the most important steps that Americans of all ages can take to improve and maintain their health.
- Physically active people have a reduced risk of most chronic diseases, a reduced risk of becoming overweight or obese, and improved physical function than do people who are inactive.

DGAC Grade: Strong

Physical Activity and Health Outcomes in the General Population (cont.)

Draft Conclusion Statement:

- There is a clear relationship between physical activity and cardiorespiratory health and metabolic health in all age groups, including improved cardiorespiratory fitness and reduced risk for type 2 diabetes and metabolic syndrome.
- High-intensity muscle-strengthening activity enhances skeletal muscle mass, strength, power, and intrinsic neuromuscular activation.

DGAC Grade: Strong

Physical Activity and Health Outcomes in Children

- What is the relationship between physical activity, body weight, and other health outcomes?

Source of evidence:

Physical Activity Guidelines Advisory Committee Report,
2008

Physical Activity and Health Outcomes in Children

Draft Conclusion Statement:

- Strong evidence demonstrates that the physical fitness and health status of children and youth is substantially enhanced by frequent physical activity.
- Compared to inactive young people, physically active children and youth have higher levels of cardiorespiratory endurance and muscular strength.
- Well documented health benefits include lower body fatness, more favorable cardiovascular and metabolic disease risk profiles, enhanced bone health, and reduced symptoms of anxiety and depression.

DGAC Grade: Strong

Physical Activity and Health Outcomes in Children (cont.)

Draft Conclusion Statement:

- These conclusions are based on the results of observational studies in which higher levels of physical activity were found to be associated with favorable health parameters as well as experimental studies in which exercise treatments caused improvements in physical fitness and various health-related factors.

DGAC Grade: Strong

Physical Activity and Health Outcomes in Adults, Including Older Adults

- What is the relationship between physical activity, body weight, and other health outcomes?
- What is the relationship between physical activity and musculoskeletal health?
- What is the relationship between physical activity and prevention of breast and colon cancer?
- What is the relationship between physical activity and mental health?

Source of evidence:

Physical Activity Guidelines Advisory Committee Report, 2008

Physical Activity and Health Outcomes in Adults, Including Older Adults

Draft Conclusion Statement:

- Compared to less active people, physically active adults, including older adults, exhibit a higher level of cardiorespiratory and muscular fitness, healthier body mass and composition, and a biomarker profile that is more favorable for preventing cardiovascular disease and type 2 diabetes and enhancing bone health.
- In addition, physically active adults and older adults have lower rates of all-cause mortality, coronary heart disease, high blood pressure, stroke, type 2 diabetes, metabolic syndrome, colon cancer, breast cancer, and depression compared to less active counterparts.

DGAC Grade: Strong

Physical Activity and Health Outcomes in Adults, Including Older Adults (cont.)

Draft Conclusion Statement:

- Physically active adults who are overweight or obese experience a variety of health benefits that are generally similar to those observed in people of ideal body weight.
- There is a clear relationship between physical activity and prevention of breast and colon cancer.
- Physical activity reduces risk of depression and cognitive decline in adults and older adults.

DGAC Grade: Strong

Physical Activity and Health Outcomes in Adults, Including Older Adults (cont.)

Draft Conclusion Statement:

- Physical activity is associated with higher levels of functional health and a lower risk of falling in older adults.
- In older adults with existing functional limitations, fairly consistent evidence indicates that regular physical activity is safe and has a beneficial effect on functional ability.
- Reasonably consistent evidence indicates that physically active adults and older adults have better quality sleep and health-related quality of life.

DGAC Grade: Moderate

Physical Activity Dose in Children

- What dose of physical activity is most likely to provide health benefits?

Sources of evidence:

2008 Physical Activity Guidelines for Americans;
Physical Activity Guidelines Advisory Committee Report,
2008

Physical Activity Dose in Children

Draft Conclusion Statement:

- Substantial evidence indicates that important health and fitness benefits can be expected to accrue to most children and youth who participate daily in 60 or more minutes of moderate to vigorous physical activity.
- Certain specific types of physical activity should be included in an overall physical activity pattern in order for children and youth to gain comprehensive health benefits.

DGAC Grade: Strong

Physical Activity Dose in Children (cont.)

Draft Conclusion Statement:

- These include regular participation in each of the following types of physical activity on 3 or more days per week: resistance exercise to enhance muscular strength in the large muscle groups of the trunk and limbs, vigorous aerobic exercise to improve cardiorespiratory fitness and cardiovascular and metabolic disease risk factors, and weight-loading activities to promote bone health.

DGAC Grade: Strong

Physical Activity Dose in Children (cont.)

Draft Conclusion Statement:

- Therefore, the DGAC concurs with the 2008 Physical Activity Guidelines for Americans that to achieve health benefits, children and adolescents should engage in 60 minutes (1 hour) or more of physical activity daily.
- Most of the 60 or more minutes a day should be either moderate- or vigorous-intensity aerobic physical activity, and should include vigorous-intensity physical activity at least 3 days a week.
- As part of their 60 or more minutes of daily physical activity, children and adolescents should include muscle-strengthening physical activity on at least 3 days of the week, as well as bone-strengthening physical activity on at least 3 days of the week.

DGAC Grade: Strong

Physical Activity Dose in Adults, Including Older Adults

- What dose of physical activity is most likely to provide health benefits?

Sources of evidence:

2008 Physical Activity Guidelines for Americans;
Physical Activity Guidelines Advisory Committee Report,
2008

Physical Activity Dose in Adults, Including Older Adults

Draft Conclusion Statement:

- For overall public health benefit, data from a large number of studies evaluating a wide variety of benefits in diverse populations generally support 30 to 60 minutes per day of moderate- to vigorous-intensity physical activity on 5 or more days of the week.
- For a number of benefits, such as lower risk for all-cause mortality, coronary heart disease, stroke, hypertension, and type 2 diabetes in adults and older adults, lower risk is consistently observed at 2.5 hours per week of moderate- to vigorous intensity activity.

DGAC Grade: Strong

Physical Activity Dose in Adults, Including Older Adults (cont.)

Draft Conclusion Statement:

- The amount of moderate- to vigorous-intensity activity most consistently associated with significantly lower rates of colon and breast cancer and the prevention of unhealthy weight gain or significant weight loss by physical activity alone is in the range of 3 to 5 hours per week.
- For a variety of health and fitness outcomes, including chronic disease prevention, improvement of various disease biomarkers and the maintenance of a healthy weight, reasonably strong evidence demonstrates that amounts of moderate to vigorous-intensity activity that exceed 150 minutes per week are associated with greater health benefits.

DGAC Grade: Strong

Physical Activity Dose in Adults, Including Older Adults (cont.)

Draft Conclusion Statement:

- Therefore, the DGAC concurs with the 2008 Physical Activity Guidelines for Americans that to achieve health benefits, all adults should avoid inactivity.
- Some physical activity is better than none, and adults who participate in any amount of physical activity gain some health benefits.
- To gain substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous intensity aerobic activity.

DGAC Grade: Strong

Physical Activity Dose in Adults, Including Older Adults (cont.)

Draft Conclusion Statement:

- For additional and more extensive health benefits, adults should increase their aerobic physical activity to 300 minutes (5 hours) a week of moderate intensity, or 150 minutes a week of vigorous intensity activity, or an equivalent combination of moderate- and vigorous-intensity activity.
- Additional health benefits are gained by engaging in physical activity beyond this amount.
- Adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.

DGAC Grade: Strong

Physical Activity Dose in Older Adults

- Are there any special considerations for what dose of physical activity is most likely to provide health benefits for older adults?

Sources of evidence:

2008 Physical Activity Guidelines for Americans;
Physical Activity Guidelines Advisory Committee Report,
2008

Physical Activity Dose in Older Adults

Draft Conclusion Statement:

- The evidence indicates that because the exercise capacity of adults tends to decrease as they age, older adults generally have lower exercise capacities than younger persons.
- Older adults need a physical activity plan that is of lower absolute intensity and amount (but similar in relative intensity and amount) than is appropriate for more fit people, especially when they have been sedentary and are starting an activity program.

DGAC Grade: Strong

Physical Activity Dose in Older Adults (cont.)

Draft Conclusion Statement:

- For older adults at risk of falling, strong evidence exists that regular physical activity is safe and reduces falls by about 30%.
- Most evidence supports a program of exercise with the following characteristics: 3 times per week of balance training and moderate-intensity muscle-strengthening activities for 30 minutes per session and with additional encouragement to participate in moderate-intensity walking activities 2 or more times per week for 30 minutes per session.

DGAC Grade: Strong

Physical Activity Dose in Older Adults (cont.)

Draft Conclusion Statement:

- Some evidence, albeit less consistent, suggests that tai chi exercises also reduce falls.
- Successful reduction in falls by tai chi interventions resulted from programs conducted from 1 to 3 hours or more per week.
- No evidence indicates that planned physical activity reduces falls in adults and older adults who are not at risk for falls.

DGAC Grade: Strong

Physical Activity Dose in Older Adults (cont.)

Draft Conclusion Statement:

- Therefore, the DGAC concurs with the 2008 Physical Activity Guidelines for Americans that to gain health benefits from physical activity, older adults should follow the adult recommendations for dose of physical activity.
- Older adults who are at risk for falls should incorporate balance training exercises into their physical activity routine.
- When older adults cannot do 150 minutes of moderate-intensity aerobic activity a week because of chronic conditions, they should be as physically active as their abilities and conditions allow.

DGAC Grade: Strong

Physical Activity Dose in Older Adults (cont.)

Draft Conclusion Statement:

- Older adults should determine their level of effort for physical activity relative to their level of fitness.
- Older adults with chronic conditions should understand whether and how their conditions affect their ability to do regular physical activity safely.

DGAC Grade: Strong

Physical Activity Interventions for Children

- What is the relationship between school-based physical activity interventions and increased physical activity?
- What is the relationship between early child care and education center-based interventions and increased physical activity?
- What is the relationship between home-based exercise programs and increased physical activity?
- What is the relationship between the built environment and amount of physical activity?

Source of evidence:

Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth (2013)

Physical Activity Interventions for Children

Draft Conclusion Statement:

- Multi-component school-based interventions can increase physical activity in children during school hours.
- Enhanced physical education (PE) can increase overall physical activity in children and physical activity time during PE class.

DGAC Grade: Strong

Physical Activity Interventions for Children (cont.)

Draft Conclusion Statement:

- Evidence is limited, but consistent, that school-based physical activity breaks can increase physical activity among children.
- Reasonably consistent evidence suggests that improving the built environment can increase physical activity in children.

DGAC Grade: Limited

Physical Activity Interventions for Children (cont.)

Draft Conclusion Statement:

- Evidence to date is insufficient to conclude that intervention strategies in the home or early education centers increase physical activity in children.

DGAC Grade: N/A

Next Steps

1. Craft overall implications statement.
2. Draft physical activity chapter for 2015 DGAC Report.

Physical Activity Writing Group

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