

A Report on Physical Activity of Missoula County Youth



Physical Activity:

- **Why is it so Important?**
- **How Much Should Children Be Doing each Day?**
- **How Are Missoula Youth Doing?**
- **Parents Attitudes and Beliefs**
- **How Can We Improve?**

2007 Physical Activity (PA) Monitoring

How Much PA should Youth be Doing?

PA Recommendations for Youth (6-18)

HEALTH

- **60+ minutes** of moderate intensity physical activity (very brisk walk to easy jog) most days of the week, preferably daily.

FITNESS

- **20+ minutes** of vigorous physical activity (such as running) at least three days per week.

These minutes should be accumulated 10 minutes at a time throughout the day!



Why is Physical Activity important?

PA IMPROVES SCHOOL PERFORMANCE...

- There is a positive relationship between PA and academic performance.^{1,3,6}
- Enhanced academic performance⁶ by improving physical health, self-esteem⁴ and physical self perception.⁵
- Students demonstrate better concentration following physically activity and learn more rapidly when they participate in physical activity later in the day.^{2,7}

DECREASING SCREEN TIME...

- Decreasing screen time increases physical activity and global self worth.⁵
- Youth in the US watch an average 6.5 hours of screen time per day, that is 27% of an entire day and nearly 80% of a child's free time.⁸
- PA is a positive method to decrease screen time.

SHORT & LONG TERM HEALTH PA BENEFITS...

- PA decreases the future risk of stroke, cardiovascular disease, and other major health factors such as obesity, high blood pressure, and diabetes.
- Promotes good bone, muscle, and joint health later in life
- Helps people handle anxiety and stress and has been found to elevate a person's mood and alleviate depression.
- Sedentary youth are developing chronic disease at a younger age.

PA OUTDOORS, CAN...

- Reduce stress and symptoms of attention deficit disorder.⁹⁻¹⁰
- Enhance self-control, self-discipline, self-esteem, independence, concentration levels, cognitive abilities, creativity, problem solving, and cooperation.^{9 11-14}

How are Missoula Youth Doing?

SUMMARY OF MAJOR RESULTS

533 Missoula County students were monitored for 5 days each. Physical activity is generally reported as daily minutes of moderate plus vigorous physical activity (MVPA) intensity accumulated in 10 min bouts.

% Students Meeting Health Guidelines

Elementary School = 78%

Middle School = 54%

High School = 11%

All students = 47% met PA health guidelines.

% of Students Meeting Fitness Guidelines

Elementary School = 27%

Middle School = 12%

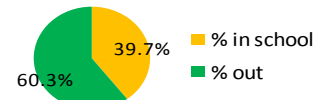
High School = 2%

All students = 16% met PA fitness guidelines.

PA LOCATION—In vs. Out of School

Overall, 40% of weekday MVPA occurs during school hours.

- **Elementary:** 34% (51min) of MVPA occurs during school.
- **Middle School:** 31% (31min) of MVPA occurs during school.
- **High School:** 44% (17 min) of MVPA occurs during school.
- **HOWEVER:** 72% of parents believe most of their child's physical activity should occur half in school and half out of school.



MVPA DURING RECESS

(Lunch period for HS) (1 minute bouts)

- **Elementary:** 16 min MVPA per 30 minutes of recess.
- **Middle School:** 7 min MVPA per 30 minutes of recess.
- **High School:** 3 min MVPA per 30 minutes of lunch.

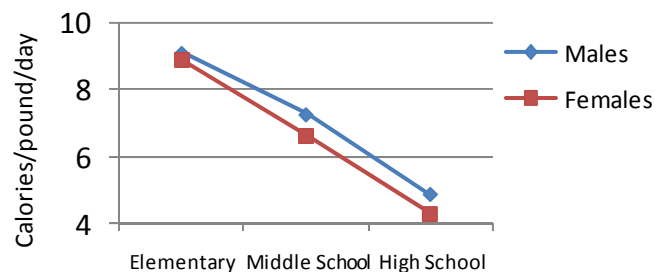
PHYSICAL EDUCATION CLASSES (1 minute bouts)

- **Elementary:** 11 min MVPA / 30 min of PE class.
- **Middle School:** 13 min MVPA / 30 min of PE class.
- **High School:** 6 min MVPA /30 min of PE class.

PHYSICAL ACTIVITY ENERGY EXPENDITURE

There is a dramatic drop in the amount of calories burned from activity as age increases.

- **Elementary:** 9.0 calories/lbs/day.
- **Middle school:** 6.9 calories/lbs/day.
- **High School:** 4.5 calories/lbs/day.



in Missoula 2nd through 12th grades.

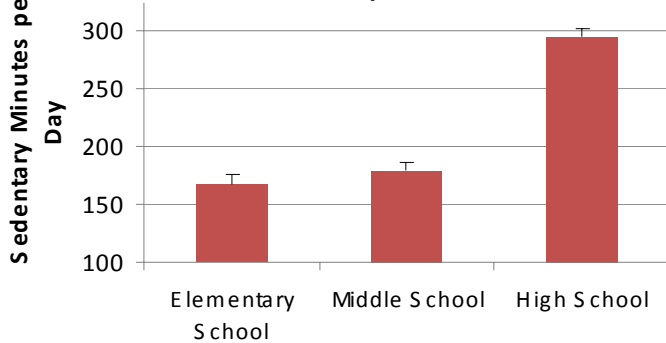
How are Missoula Youth Doing?

SEDENTARY ACTIVITY (No Movement)

Sedentary minutes increase by 20% from elementary (645 min/day) to high school (775 min/day) when considering daytime and sleeping.

- o **Elementary:** 165 sedentary minutes during waking hours.
- o **Middle School:** 180 sedentary minutes during waking hours.
 - o +18% over elementary.
- o **High school:** 295 sedentary minutes during waking hours.
 - o +79% over elementary.

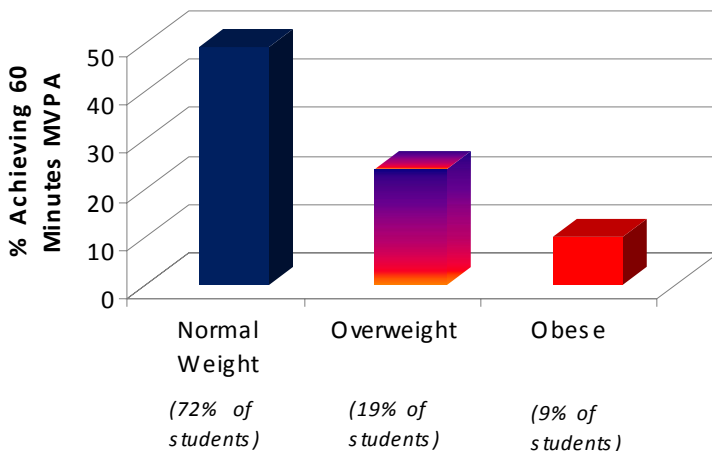
Minutes per waking day (16hrs) of sedentary activity



OBESITY AND PHYSICAL ACTIVITY

Body Mass Index (BMI) is a measure of overweightness. As age adjusted BMI percentile increased, MVPA decreased.

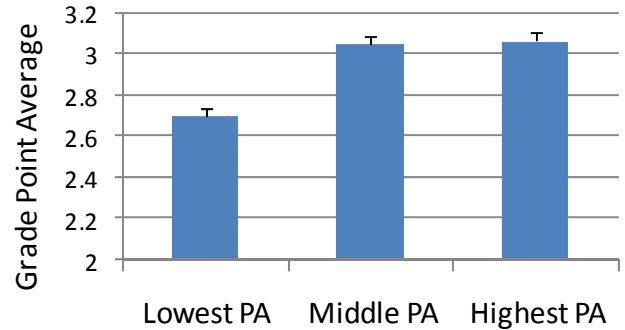
- o **Normal weight students: 72%** were considered normal weight.
 - o **49%** of normal weight students are meeting PA guidelines for health. **51%** are sedentary and have increased risk of future chronic disease.
- o **Students at risk of becoming overweight: 19%** of students were at risk of becoming obese.
 - o Only **24%** of this group are meeting physical activity guidelines for health. **74%** are at higher risk due to sedentary behavior.
- o **Overweight (Obese) Students: 9%** of students were at or above the 95th percentile for BMI.
 - o Only **10%** of this group are meeting physical activity guidelines for health. Being both obese and sedentary put youth at very high risk of future chronic disease.



How are Missoula Youth Doing?

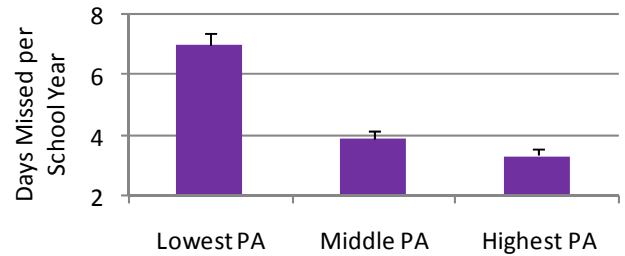
GRADE POINT AVERAGE

- o Grade point average was lowest in students with the lowest physical activity.



ABSENTEEISM

- o Absenteeism was highest in students with the lowest physical activity.



Thanks to the Missoula County and Frenchtown Public School for the cooperation and participation in this project.

250 Calories per hour



75 Calories per hour



Thanks to the Missoula City-County Public Health Dept. for help and support on this project.

Prepared by Steven Gaskill, Kelly Rice, Laura Mohar, Carla Cox and Arthur Miller for the Missoula County and Frenchtown School districts.

PDF files of the entire report are available from steven.gaskill@umontana.edu

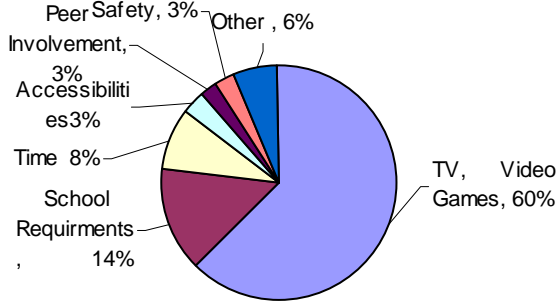
What are Parents' Attitudes and Beliefs Regarding Physical Activity?

Highlights of the 2007 Missoula Parents' Attitudes and Beliefs Survey

Barriers to Physical Activity: Top 5 Barriers

- Parents reported the #1 barrier to their child's physical activity was TV, Video games (60%).
- Screen Time (TV, Video games, computers, 60%), homework and other school requirements (14%), limited time for PA (8%), accessibility (3%), all others (12%).
- School Requirements increases from 10% in elementary to 17% in middle school.

#1 Parent Reported Barrier to Physical Activity for their kids



Parents attitudes and beliefs about their child's physical activity?

- 29% of parents feel their child receives enough physical activity during school.
- 74% of parents feel that physical activity improves their child's academic performance.
- Only 8% of parents feel that physical activity would distract their child from their completion of homework.
- Most parents believe physical activity for their child would help them be healthy (97%), help control their weight (92%), give them more energy (93%), be fun for them (95%), and keep them in shape (96%).
- 66% of parents report participating in physical activity with their children less than 2 days per week.
- 98% of students believe they are physically active, and a large number of students (95%) and parents (71%) believe that students are very active after school.
- The above data suggests a need for education about physical activity for health and fitness for both parents and students.

Where should Physical Activity Occur?

- 72% of parents believe that there should be an even balance of PA in and out of school.
- 22% of parents believe most physical activity should occur out of school.
- 4% of parents believe that most physical activity should occur during school hours.

Neighborhood Safety

- There was a difference in reported MVPA minutes per week between children of parents who perceived their neighborhood as being of average safety (203 min) compared to children of parents who perceived their neighborhood to be safe (230 min). Only five parents (<2%) rated their neighborhood as unsafe, thus no results were calculated for that group.
- 98% report their neighborhoods as either average safety, safe, or very safe.
- #1 safety concern was traffic (64%) strangers (34%) and dogs (14%).

Joint Parent/Child Physical Activity

- The more days per week that parents participate in physical activity with their child, the greater the average minutes of MVPA children accumulate daily.
- The children of the 1/3 most active parents were significantly more active than children of the least 1/3 active parents (163 min/wk).

150 calories burned/ 30 min



32 calories burned/30 min



How Can We Improve?

Missoula is an outdoor recreation paradise! Use our natural environment for a healthier life

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|--|---|
| <ul style="list-style-type: none"> • Walk the dog as a family • Hike the "M" • Walk or ride bikes to and from school • Play frisbee golf at Pattee Canyon • Take family walks in the Rattlesnake wilderness • Ride bikes with a friend around town | <ul style="list-style-type: none"> • Go to the skate park • Rent a free bike from Parks and Recreation • Go to Dragons Hollow • Walk along the river trail as a family • Play Outside with friends • Go to the Carousel |
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References

Thanks to Missoula County Public Schools and Frenchtown Schools.

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|-------------------|-----------------------|----------------------------|
| 1. Shepard, 1996 | 5. Boldfield, 2007 | 9. Kuo and Taylor, 2004 |
| 2. Raciv, 1990 | 6. Grissom, 2004,2005 | 10. Wells and Evans, 2003 |
| 3. Ahamed, 2007 | 7. Daley, 2000 | 11. Kellert and Derr, 1998 |
| 4. Tremblay, 2000 | 8. Sallis et al, 1999 | 12. Wells, 2000 |
| | | 13. Kellert, 2005 |
| | | 14. Bell and Dymont, 2006 |