Bureau of Land Management
Outcomes-Focused Management

Dorothy Morgan
Outdoor Recreation Planner

Recreation and Visitor Services
BLM National Office,
Washington DC
Evolution of the management of recreation resources.

Outcomes-Focused Management.

Types of benefits.

How does BLM apply OFM to planning for Recreation and Visitor Services?

OFM Data Collection Project (surveys and focus groups)
Bureau of Land Management

245 million
surface acres

More than
any other
Federal
agency in the
US

Located in the
12 Western
states, including
Alaska.

Multiple Use
WHY?
Many men go fishing all their lives without knowing that it is not fish they are after.
- Henry David Thoreau
Doing? ➔ Activity

Feeling, Thinking? ➔ Experience

Lasting Effects? ➔ Outcomes
1991 “Applying Knowledge About the Benefits of Leisure” Workshop in Estes Park, CO (half practitioners and half social scientists).

Requested pilot projects to initiate benefits research/planning.

BLM – Don Bruns & Grand Junction Manager/staff.
This first pilot test of BBM on a public wildland area started in 1991 to guide planning the recreation components of the Integrated Resource Management Plan of the Ruby Canyons/Black Ridge recreation area, which was approved in 1998 (now MCNCA).
Evolution of Benefits in BLM – First Pilot Project

- Personnel:
  - Don Bruns (CSO)
  - Field Office Staff (Brian Hopkins)
  - Bev Driver, U.S. Forest Service’s Rocky Mountain Research Station
  - Researchers (Dorothy Anderson, Marty Lee, and Taylor Stein)

- Take a ways:
  - Began BLM’s experiment with Benefits Based Management
  - Resulted in a Resource Mgt. Plan (1998) with benefit based outcomes
  - Fueled Driver and Bruns quest to develop a benefits based planning framework.

- Don Bruns, Bev Driver and Brian Hopkins worked to conceptually refine the BBM framework and planning process (integrate with LUP).
- Late 1990’s and early 2000’s - Benefits Workshops in CO and other western states.
- BBM was made policy in BLM on May 5, 2006 IM 2006-060
- Revised in 2011
2011 – New Manual

2014 – New Handbook

2015 – New Training

2017 – OFM Surveys and Focus Groups Approval
The Evolution of the Management of Recreation Resources

**Activity-based Management**

Defines recreation as participating in an activity

Management actions are oriented to only provide activities ... very simplistic.

Describing/counting people participating in activities

Does not consider the character of recreation settings
The Evolution of the Management of Recreation Resources

**Experienced-based Management**

Focuses on the types of recreation experiences customers desire

Addresses setting character that affects the quality of the recreation experience

Provides a basis to discuss and improve the quality of recreation opportunities and outcomes

Experience-based Management
(Realize desired experiences and activities [e.g. ROS])

Activity-based Management
(Focus only on desired activities)
Outcomes-focused Management

A recreation management framework that focuses on positive outcomes

Each transition built on (not replace) the framework of the previous

Each transition did a better job of focusing on the ENDS of management
The notion of managing recreation resources for customers to realize outcomes is not new ...

... recreation managers have always been concerned with social and economic needs
... however, a systematic, integrated & operational outcomes approach for the delivery of recreation services did not fully exist until Benefits-based Management (BBM) was conceptualized ... now recognized as OFM.
Outcomes-focused Management (OFM):
An approach to recreation management that focuses on the positive outcomes gained from engaging in recreational activities.
Outcomes are inclusive of experiences and benefits...

Experiences. **Immediate** states of mind resulting from participation in recreation activities that result in benefits.
Outcomes are inclusive of experiences and benefits...

Benefits. The results of a satisfying recreation experience that improve or maintain a desired condition.

- accrue from recreation participation
- are both short and long term
- are realized onsite and offsite
Personal well-being and human development ...

THE GREAT OUTDOORS

- Vitamin D
- Stress Levels
- Fitness Levels
- ADHD Symptoms
- Test Scores
- Immune System
- Depression

HARVEST THE BENEFITS

sources:
http://www.BeOutThere.org
6 WAYS CAMPING IMPROVES HEALTH & CIRCADIAN RHYTHM
1. Light Therapy for Circadian Rhythm
2. Forest Bathing Stress Relief
3. Improved Sleep
4. Time to Disconnect & Family Time
5. A Breath of Fresh Air
6. Exercise in Natural Beauty
Social/Community Benefits:

• Improved Quality of life
• Positive lifestyle choices
• Reduced crime
• Sense of community pride and involvement
Social/Community Benefits:
“Rebelle Rally…made me not only a better driver, but a better friend, mom, and wife.”

I have trouble finding the words to sum up what this past year of training and participating in the Rebelle has meant to me. I do know we started in South Lake Tahoe teams of two, yet all finished on the same team... We are the first Rebelles! The knowledge I have gained, both in the dirt and out have made me not only a better driver, but a better friend, mom, and wife. I learned some things I love about myself - that I didn't know and also a few areas that could use some work. I am grateful and humbled to have shared this adventure with every single Rebelle!

-Jenn Zipp Richmond
Team Dirty Wings, #111
GREAT HUNT! LET'S GO EAT!

HANG ON! I GOTTA POST THIS ON MY WALL...
Economic Benefits

- Diversified economies
- Support businesses
- Employment opportunities

Benefits Related to Economic Prosperity
- Attracting tourists
- Attracting businesses
- Reducing taxes
- Attracting retirees
- Enhancing real estate values
- Stimulation of equipment sales
Listen hard enough and you can hear the spirits of those who came before you.
Environmental Benefits

Improved understanding and stewardship of
- natural
- cultural
- historic resources
Experience and Benefit Checklist
(Moore and Driver 2005, Tinsley, and Manfredo 1991)
Use at a guide, but not as a shopping list!
### Examples from Experience and Benefit Checklist
*(BLM Recreation Planning Handbook Appendix 2)*
*(Moore and Driver 2005; Driver, Tinsley, and Manfredo 1991)*

<table>
<thead>
<tr>
<th>Personal</th>
<th>Community</th>
<th>Economic</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental well-being</td>
<td>Reduced social</td>
<td>Reduced health costs</td>
<td>Reduced wildlife harassment</td>
</tr>
<tr>
<td></td>
<td>isolation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sense of self-reliance</td>
<td>Community integration</td>
<td>Increased work productivity</td>
<td>Greater recycling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater sense of adventure</td>
<td>Family bonding</td>
<td>Reduced absenteeism</td>
<td>Sustainability of cultural heritage</td>
</tr>
<tr>
<td>Adaptability</td>
<td>Parenting skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Reduced spread of invasive species</td>
</tr>
</tbody>
</table>
You humans spend most of your time “managing” then you let management and implementation actions lead the way during “planning” processes.
Application of OFM to Land Use Planning for Recreation
**Required LUP Decisions for R&VS:**

1. Designate Recreation Management Areas (RMAs).

2. Establish R&VS objectives for each RMA.

3. Identify *LUP-level* management actions and allowable uses for each RMA.
Outcomes-focused recreation objectives for an SRMA or RMZ identify:

• the recreation activities to be emphasized and

• the specific outcomes (experiences and benefits) to be realized
The principal difference between traditional objectives and OFM objectives is that OFM objectives target specific:

- activities and desired outcomes

instead of:

- recreation
development,
- implementation, or
- resource protection
Planning for Recreation and Visitor Services

Recreation Activity

Experiences
Enjoying natural landscapes and outdoor aesthetics

On-Site Benefits
Greater environmental awareness & sensitivity

Off-Site Benefits
Greater community stewardship of recreation areas and natural resources
RECREATION OBJECTIVE

REC-OBJ-01e (Upper Colorado River SRMA - RMZ 2 - Pinball Recreation Site to Glenwood Canyon). Participants in surveys/assessments report an average 4.0 realization (4.0 on a probability scale where: 1 = not at all realized to 5 = totally realized) of the targeted experiences and benefits listed below, five years after the beginning of implementation.

Activities.
- Float boating
- Tubing.

Experiences.
- Enjoying participating in group/family outdoor activities
- Enjoying getting some needed mental/physical rest
- Escaping everyday responsibilities for a while.

Benefits.
- Personal:
  - Developing stronger ties with my family or friends
  - Restored my mind from stress/tension/anxiety
  - Improved balance of work and play in my life

- Community/Social:
  - Strengthening relationships with family and friends
  - Lifestyle improvement or maintenance
  - Greater community involvement in recreation and other land use decisions

- Environmental:
  - Greater community ownership & stewardship of recreation & natural resources

- Economic:
  - Generates employment
  - Maintain tourism revenue.
Upper Colorado River SRMA Objective

RMZ 2 - Pinball Recreation Site to Glenwood Canyon

Participants in surveys/assessments report an average 4.0 realization (4.0 on a probability scale where: 1 = not at all realized to 5 = totally realized) ... of the targeted experiences and benefits listed below ...

five years after the beginning of implementation.
Do I personally receive any of the targeted benefits from recreating in the area?

Do I believe other individuals probably do so?

Do groups of people (from family members → local communities → society as a whole) receive the types of social or economic benefits listed?

Do natural, cultural or historic resources benefit in any of the ways listed?
UNDER AN OFM FRAMEWORK...

Stay COMMITTED to your DECISIONS,
but stay FLEXIBLE in your APPROACH

= ADAPTIVE MANAGEMENT

Tom Robbins
Plan for and manage the recreation setting characteristics (RSC) and the activities that occur within them

**PHYSICAL RSCs.** The physical condition of nature and the landscape

**SOCIAL RSCs.** The social conditions associated with use

**OPERATIONAL RSCs.** The operational conditions to manage recreation use
Recreation Setting Characteristics (RSCs): Physical – Social - Operational

- Primitive
- Back Country
- Middle Country
- Front Country
- Rural
- Urban
### Physical Component - Qualities of the Landscape

<table>
<thead>
<tr>
<th>Remoteness (approx. distance from routes)</th>
<th>Primitive Back Country</th>
<th>Middle Country</th>
<th>Front Country</th>
<th>Rural Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 1/2 mile from either mechanized or motorized trails and routes.</td>
<td>Within 1/2 mile of mechanized trails/routes.</td>
<td>Within 1/2 mile of four-wheel-drive, ATV, and motorcycle routes.</td>
<td>Within 1/2 mile of low-clearance or passenger vehicle routes (e.g., unpaved county roads, private land routes).</td>
<td>Within 1/2 mile of paved/primary roads and highways.</td>
</tr>
<tr>
<td>Naturalness (landscape, texture, form, line, color)</td>
<td>Undisturbed natural landscape.</td>
<td>Natural landscape with modifications in harmony with surroundings and not visually obvious (e.g., stock ponds, historic structures).</td>
<td>Character of the natural landscape retained. A few modifications contrast with character of the landscape (e.g., fences, ditches).</td>
<td>Character of the natural landscape partially modified but none overpower natural landscape (e.g., structures, utilities).</td>
</tr>
<tr>
<td>Visitor Facilities</td>
<td>No structures. Footpath and water trails only.</td>
<td>Developed trails mostly of native materials such as log bridges. Structures are rare and isolated.</td>
<td>Maintained and marked trails, simple trailhead developments, and basic toilets.</td>
<td>Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays.</td>
</tr>
</tbody>
</table>

### Social Component - Qualities Associated with Use

<table>
<thead>
<tr>
<th>Contacts (average # of other groups)</th>
<th>Primitive Back Country</th>
<th>Middle Country</th>
<th>Front Country</th>
<th>Rural Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 3 encounters/day at campsites and fewer than 6 encounters/day on travel routes.</td>
<td>7-15 encounters/day on travel routes.</td>
<td>15-29 encounters/day on travel routes.</td>
<td>30 or more encounters/day on travel routes.</td>
<td>People seem to be generally everywhere.</td>
</tr>
<tr>
<td>Group Size (average)</td>
<td>Fewer than or equal to 3 people/group.</td>
<td>4-6 people per group.</td>
<td>7-12 people/group.</td>
<td>13-25 people/group.</td>
</tr>
</tbody>
</table>

### Operational Component - Conditions Created by Management and Controls over Recreation Use

<table>
<thead>
<tr>
<th>Public Access (types of public travel allowed)</th>
<th>Primitive Back Country</th>
<th>Middle Country</th>
<th>Front Country</th>
<th>Rural Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foot, horse, and motorized float boat travel.</td>
<td>Mountain bikes and perhaps other mechanized use, but all is nonmotorized.</td>
<td>Four-wheel-drive vehicles, ATVs, dirt bikes, or snowmobiles, in addition to nonmotorized, mechanized use.</td>
<td>Two-wheel-drive vehicles predominant, but also four-wheel drives and nonmotorized, mechanized use.</td>
<td>Ordinary highway auto and truck traffic is characteristic.</td>
</tr>
<tr>
<td>Visitor Services (and information)</td>
<td>No maps or brochures available onsite. Staff rarely present to provide onsite assistance.</td>
<td>Basic maps, staff information (e.g., seasonally, high-use periods) to provide onsite assistance.</td>
<td>Area brochures and maps, staff occasionally present (e.g., most weekends) to provide onsite assistance.</td>
<td>Information materials describe recreation areas and activities, staff occasionally present (e.g., weekdays and weekends).</td>
</tr>
<tr>
<td>Management Controls (regulations)</td>
<td>No on-site posts/signs of visitor regulations, interpretive info, or ethics. Few use restrictions.</td>
<td>Basic user regulations at key access points. Minimum use restrictions.</td>
<td>Some regulatory and ethics signs. Moderate use restrictions (e.g., fishing, hunting, human waste).</td>
<td>Rules, regulations, and ethics clearly posted. Use restrictions, limitations, and/or closures.</td>
</tr>
</tbody>
</table>
LUP Level Decisions

Within R&VS

- Sustain or enhance recreation objectives.
- Maintain or enhance the desired physical, social, and operational RSCs.
- Constrain uses, including incompatible recreation activities that are detrimental to meeting recreation objectives.
- Address visitor health and safety, resource protection, and use and user conflicts (e.g., areas closed to target shooting, camping limitations).
- Address the type(s), activities, and locations where special recreation permits (SRPs) would or would not be issued.
LUP Level Decisions
Within Other Programs

- Stipulations on mineral or other development
- Designations for all types and modes of travel
- Areas available for livestock grazing
- Visual resource management classes
So How Do Recreation Planners Determine Which Experiences and Benefits to Target in Objectives?

You have to ask questions!!!
Hiking is the answer.
Who cares what the question is.
Biking is the answer.
Riding is the answer.
Riding is the answer.
Climbing is the answer.
Hunting is the answer.
Fishing is the answer.
Boating is the answer.
Party !!!! is the answer.
Who cares what the question is.

WE DO!
Dr. Peter Fix,
Associate Professor
of Outdoor Recreation Management
University of Alaska Fairbanks

Dr. Randy J. Virden,
Emeritus Professor
Arizona State University

Dr. Tim Casey,
Professor of Political Science
Colorado Mesa University
Informal Discussions  
Focus Groups  
Surveys

OFM Data

Monitoring Data

Data

Objective (Activities, Experiences & Benefits) & Desired RSCs
The Tools:

Focus groups
- Include wide range of stakeholders:
  - Users, local govt., service providers
  - Local non-users
  - Applicable to other resources – NLCS, TTMT, VRM, range, timber....

Visitor survey
- Onsite intercept, mail/internet follow-up
- Represent local, national, international visitors

“Generic” – Select from a pool of questions/scripts, limited flexibility to tweak wording
Focus group:

When visiting ____________________ area or zone, what experiences are you most interested in having?
When visiting ______________ area or zone, which of these experiences are you most interested in achieving? (Chose up to 3)

a. Developing your skills and abilities
b. Enjoying the area’s wildlife
c. To enjoy the scenery
d. Enjoying risk-taking adventure
e. Enjoying closeness to family/friends
f. Enjoying group affiliation and togetherness
g. To experience the natural surroundings
h. Learning more about things here
i. Being able to be more contemplative
j. Customize from Appendix 2, H-8320-1
When people visit ______________ area which of the following community and environmental benefits are most important to you?

a. Greater community engagement in recreating on public lands
b. Maintenance/preservation of distinctive community atmosphere
c. Heightened sense of community pride
d. Improved desirability as a place to retire
e. Heightened sense of community satisfaction
f. Improved respect for privately-owned lands
g. Increased awareness and protection of natural landscapes
h. Greater community ownership and stewardship of recreation and natural resources
i. Customize from Appendix 2, H-8320-1
Visitor Survey Example Question

How desirable are the following as an outcome of your trip to __________?

<table>
<thead>
<tr>
<th>Personal benefits</th>
<th>Desirability to you</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
</tr>
<tr>
<td>Resting from stress/tension/anxiety</td>
<td>1</td>
</tr>
<tr>
<td>Improving physical fitness</td>
<td>1</td>
</tr>
<tr>
<td>Improving/maintaining health</td>
<td>1</td>
</tr>
<tr>
<td>Improving outdoor knowledge</td>
<td>1</td>
</tr>
<tr>
<td>Greater aesthetic appreciation</td>
<td>1</td>
</tr>
<tr>
<td>Improving self-confidence</td>
<td>1</td>
</tr>
<tr>
<td>Community, environmental, and economic benefits</td>
<td>Not at all</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Improved desirability as a place to live</td>
<td>1</td>
</tr>
<tr>
<td>Greater community engagement in recreating on public lands</td>
<td>1</td>
</tr>
<tr>
<td>Maintenance/preservation of distinctive community atmosphere</td>
<td>1</td>
</tr>
<tr>
<td>Heightened sense of community pride</td>
<td>1</td>
</tr>
<tr>
<td>Improved desirability as a place to retire</td>
<td>1</td>
</tr>
<tr>
<td>Improved respect for privately-owned lands</td>
<td>1</td>
</tr>
</tbody>
</table>
For your primary destination zone, please indicate your preference for how each of the following recreation setting characteristics should be managed. Please base your answer on the character of the recreation setting condition that would best enhance the experience and benefits you desire. (please ✔ one answer for each of the twelve setting conditions)

<table>
<thead>
<tr>
<th>Setting Characteristics</th>
<th>Make area more isolated</th>
<th>Leave as is</th>
<th>Improve ease of vehicle access to area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remoteness:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naturalness:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campgrounds:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foot trails:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bike trails:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motorized routes:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group size:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contacts:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evidence of use:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visitor services:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directional signs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpretive signs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLM staff presence:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visitor information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guides/outfitters</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Delete RSCs that are not relevant
- Add RSCs if necessary
PLANNING FOR RECREATION AND VISITOR SERVICES

- Retain questions relevant to site specific issues

Remote site, use not well understood:

In your primary destination zone, which of the following did you visit during this trip? (please ✓ all that apply)

<table>
<thead>
<tr>
<th>(name) River</th>
<th>(name) Visitor Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overlook</td>
<td>(name) Boat Launch</td>
</tr>
<tr>
<td>(name) Trail</td>
<td>(name) Campground</td>
</tr>
<tr>
<td>Interpretive site</td>
<td>Historic site</td>
</tr>
<tr>
<td>(name) Pass</td>
<td>Other (please list):</td>
</tr>
</tbody>
</table>

Front-country site, economic impact important:

Please estimate the amount of money you and your group spent within xx miles of (name of management area) on your recent trip. (Enter the amount for each category):

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging (hotels, resorts, campgrounds, etc.)</td>
<td>$ ___</td>
</tr>
<tr>
<td>Shopping and gifts (groceries, clothing, etc.)</td>
<td>$ ___</td>
</tr>
<tr>
<td>Food, meals and drink (groceries, etc.)</td>
<td>$ ___</td>
</tr>
<tr>
<td>Tourist services (jeep tours, museums, etc.)</td>
<td>$ ___</td>
</tr>
<tr>
<td>Gas and transportation costs</td>
<td>$ ___</td>
</tr>
<tr>
<td>Add site specific category</td>
<td>$ ___</td>
</tr>
<tr>
<td>Other (Please specify):</td>
<td>$ ___</td>
</tr>
</tbody>
</table>

Likely eliminate one of these questions
• Which RSCs contribute to specific outcomes?

<table>
<thead>
<tr>
<th>Physical RSC</th>
<th>Test skills</th>
<th>Be with family</th>
<th>Solitude</th>
<th>Improved health</th>
<th>Community pride</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC</td>
<td>4.0</td>
<td>6.5</td>
<td>3.0</td>
<td>4.5</td>
<td>6.5</td>
</tr>
<tr>
<td>BC</td>
<td>5.4</td>
<td>3.8</td>
<td>4.8</td>
<td>4.2</td>
<td>6.4</td>
</tr>
<tr>
<td>PR</td>
<td>3.0</td>
<td>3.7</td>
<td>6.0</td>
<td>6.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

FC = Front Country, BC = Back Country, PR = Primitive
1 = not at all attained, 7 = Very high attainment (Hypothetical data).
Proposed process

1. Central location with full-time staff
   • Familiar with survey and focus group
   • Produce final survey, focus groups & sample
   • Conduct analysis

2. RRC research staff in key locations
   • Assist locally with focus groups and surveys
   • Local point of contacts

3. RRC regional partnerships
   • Source of local expertise, focus group moderators, and surveyors
**Fall 2014**
- Project initiated

**Summer – fall 2015**
- Programmatic review

**Summer 2016**
- Begin two pilot projects (UAF sabbatical)

**Fall 2016**
- Missoula hunter survey
- OMDP NM focus groups

**Spring 2017**
- Missoula winter survey
- Missoula focus groups
- OMDP NM survey

Dorothy Morgan, Brian Hopkins, John Kurtz - BLM

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**Organ Mountains-Desert Peaks National Monument**

**Next Steps Planning**

- Attain OMB approval for BLM to use
- Formalize in fall 2017
- Begin large scale data collection in summer 2018
Questions
Take a Break
Get out of your chair, it's killing you
SITTING INCREASES RISK OF DEATH UP TO 40%

Sitting 6+ hours per day makes you up to 40% likelier to die within 15 years than someone who sits less than 3. Even if you exercise.

Average Physical Activity (Waking Hours):
- Sedentary
- Low-Intensity Physical Activity (Walking, Standing)
- Medium-Vigorous Physical Activity (Running, Sports)

Sitting Hurts

- 2x Greater Risk of Diabetes
- 90% Greater Risk of Cardiovascular Disease
- 49% Greater Risk of All-Cause Mortality

Sources:
Katmarzyk BMJ Open, 2012
Wilmot, Diabetologia, 2012