WELCOME TO PROJECT AIM

On behalf of the entire study team and my fellow occupational therapists, we welcome you to Project AIM. Project AIM is a behavioral management program for people with osteoarthritis. It was developed by clinicians and researchers whose intent was to provide you with a non-pharmacological approach to complement your usual medical care. The added benefit of Project AIM is its effect on symptoms *and* activity levels. Over the next few weeks, you will learn to:

1. Pay attention to the relationship between your symptoms and activities to gain insight into how certain behaviors impact your daily life experiences.
2. Prioritize and plan your activities to minimize the effects of symptoms on your day-to-day life.
3. Create a balance between activity and rest that allows you to continue both what you need to do and what you want to do.

SESSION ONE: LEARNING OBJECTIVES

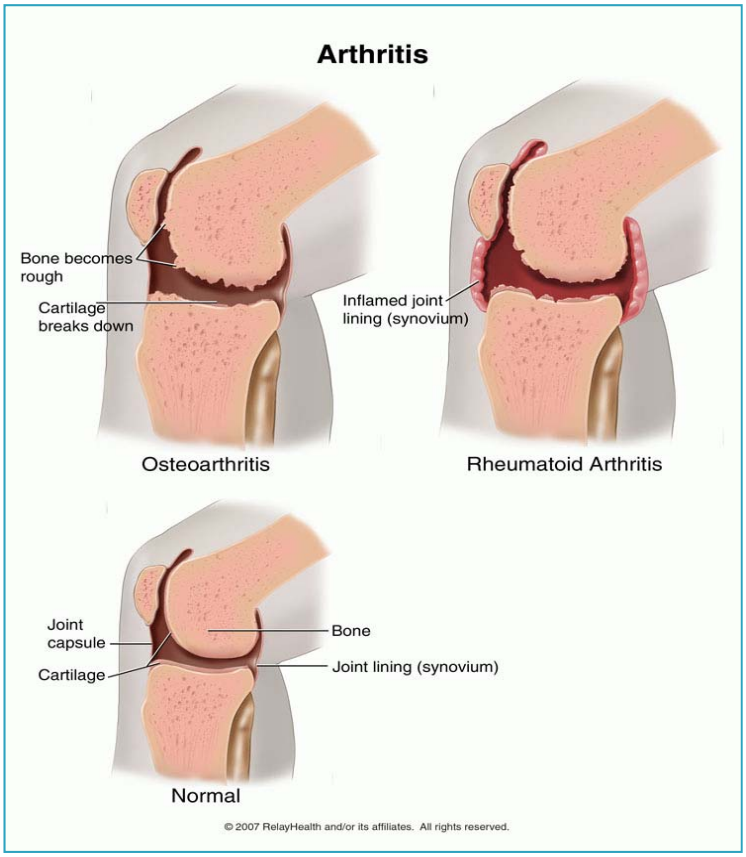
1. Become aware of behaviors that increase your osteoarthritis symptoms.
2. Develop a Time-based Activity Pacing plan of *ON-OFF* periods for a specific type of activity.
3. Set goals based on the number of successful *ON-OFF* periods you expect to complete before your next session.

PART I

INTRODUCTION TO OSTEOARTHRITIS

Approximately 46 million adults in the United States describe themselves as having some form of arthritis. In Michigan alone, 63% of adults over the age of 65 have been told by a doctor that they have arthritis. Arthritis is actually a general term that refers to joint inflammation. In fact, there are over 100 different types of arthritis, but the two most common types are Osteoarthritis and Rheumatoid Arthritis.

Though they may be the most common types of arthritis, they are very different in how they affect the joint and how the symptoms are experienced. For instance, osteoarthritis involves erosion of the joint cushioning, usually due to wear and tear on the joint. Rheumatoid arthritis is an autoimmune disease in which the body's own immune system attacks the joint lining. The figure below how osteoarthritis and rheumatoid arthritis compare with a normal joint. Notice the missing cartilage and bumpy bone surfaces in the joint with osteoarthritis in comparison to the normal healthy joint.



Symptoms and Osteoarthritis

The symptom experience for people with osteoarthritis is different for everyone, although most people will talk about three main ones: pain, fatigue, and stiffness. Each of these can impact how you participate in your daily activities.

Pain

Joint pain is the symptom most often associated with osteoarthritis. Whether you describe it as "achiness" or "discomfort," or even "clicking" or "nagging," the sensations that you feel in you joints are influenced by many factors:

- *Joint stress, from when you are on your feet all day, activates pain transmitters causing increased feelings of achiness.*
- *Being less active is related to higher levels of pain.*

Fatigue

Feelings of fatigue and tiredness after activity or after a series of activities are also quite common in people with osteoarthritis. There are several reasons why you might feel this way:

- *Pain can increase feelings of muscle tiredness because of having to change how you walk to relieve the stress on your affected joints.*
- *Being less active leads to muscle weakness and de-conditioning.*
- *Overdoing activities.*

Stiffness

Stiff and creaky joints, particularly in the morning or after long periods of not moving, contribute to decreased function in people with osteoarthritis. This stiffness is related to you not being able to move your joint through its normal motions. This happens because of the decreased cartilage in the joint and a

reduction in joint fluid. Besides reduced joint lubrication, there is another factor that contributes to feelings of stiffness:

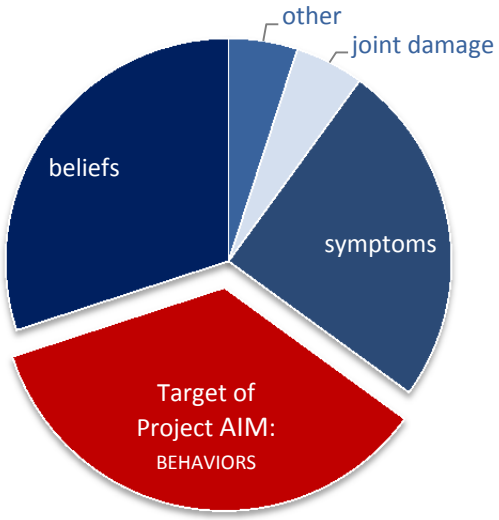
- *Inactivity. Prolonged sitting hinders the already inefficient joint lubrication process.*

Each person's experience with osteoarthritis symptoms is different. Some people are more affected by pain whereas others are more affected by fatigue. And while almost everyone with osteoarthritis reports stiffness, there is little research on this symptom.

IMPACT OF OSTEOARTHRITIS ON DAILY LIFE

In Michigan, 36% of adults with osteoarthritis report being limited in their activities because of arthritis symptoms.

Different factors contribute to the daily life experience of a person with osteoarthritis. The focus of Project AIM is on *behaviors*. The *way* in which you go about your daily activities contributes the most to your daily life experience with osteoarthritis. The consequences of increased symptoms, decreased activity and diminished satisfaction don't need to occur every day for them to be disruptive. In fact, most often their occurrence is sporadic with some days and weeks being worse than others. The varying and sometimes unpredictable nature of osteoarthritis symptoms can make them more difficult to manage on a day-to-day basis.

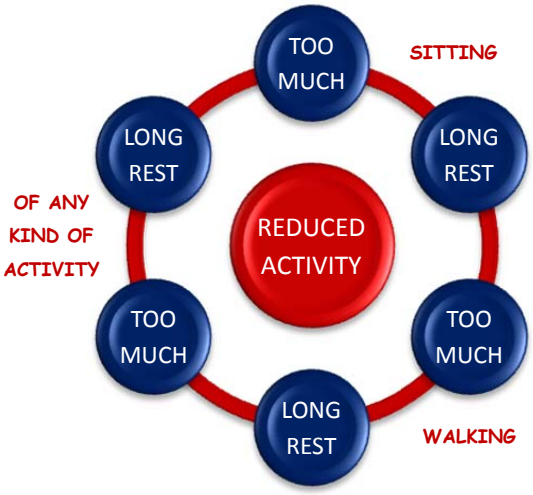


Persistent Behaviors and Osteoarthritis Symptoms

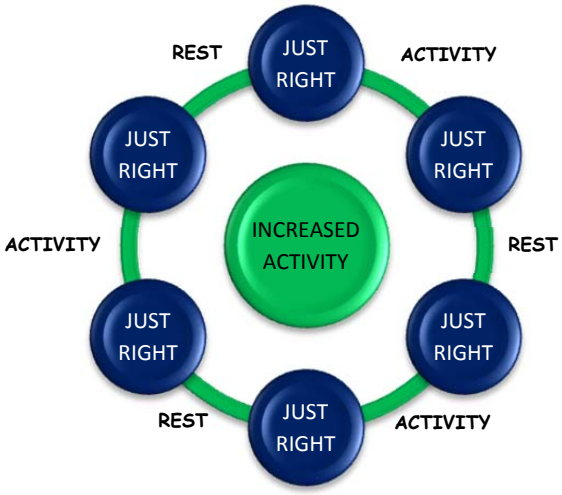
The statements below describe typical persistent behaviors that are common in people with osteoarthritis. Each of these behaviors is an example of "too much" – either too much sitting, too much standing, or too much of any activity. Over time, these behaviors contribute to symptoms having a greater impact on daily activities.

- *I sit at the computer for more than a couple of hours at a time.*
- *I don't take a break until I finish what I started.*
- *I ignore my symptoms, and finish everything on my to-do list.*

The Reduced Activity cycle (in red) below shows how persistent behaviors contribute to reduced activity levels. Over time, the amount of "too much" activity decreases, while the amount of rest continues to increase. Things that you once did with little difficulty may now be hard. You might still be able to accomplish what you need to, but the consequences come at a greater cost - usually in the way of worsening symptoms, further reductions in activity, and a loss of self-satisfaction.



Reduced Activity Cycle



Increased Activity Cycle

Notice the difference in the Increased Activity cycle (in green), on the right – the behaviors reflect a balance between activity and rest. Creating a balance between activity and rest can help you increase your activities while simultaneously reducing the severity and impact of your symptoms.

There are many different approaches people can use to create a balance between activities and rest, and between the things that you need to do and the things that you want to do. Project AIM focuses on using *TIME* to help create your balance. It is geared towards the tendency of people with osteoarthritis to overdo activities until the point when their symptoms start to impact how they live their lives. The overarching objective of this program is learning how to curb the habit of doing "too much," even if it is too much sitting.

SUMMARY

- Osteoarthritis is a disease that affects that cartilage and bony surfaces of the joints.
- Pain, fatigue, and stiffness are the three main symptoms associated with osteoarthritis.
- Behaviors contribute the most to an individual's daily experience.
- Using time as a guide, you can change your behaviors to avoid "too much."

PART II

INTRODUCTION TO ACTIVITY PACING

Activity Pacing is one way to create activity-rest balance. The idea behind Activity Pacing is that you use planned breaks to reduce your overall level of symptoms and to minimize their impact on your daily activities. It will make it easier for you to complete what you need to do, and still feel good enough to complete what you want to do.

Many people with osteoarthritis use some form of pacing; unfortunately, most do not use it effectively which leaves them feeling achy, tired, stiff and unproductive. Project AIM asks you to add Activity Pacing to your daily life in a very specific way – according to *TIME*. Time-based Activity Pacing asks you to go against your normal inclinations and stop your activity before you have finished it. Time-based Activity Pacing asks you to take a break before your joints start aching, before your fatigue gets too severe, and before you get to the point where you can't move.

PAY ATTENTION, PRIORITIZE AND PLAN

Paying attention to behaviors and activities, prioritizing which activities are important, and planning how to complete these activities are the cornerstone behaviors associated with Time-based Activity Pacing. Many individuals go about their daily activities on autopilot with little thought about *how* they actually engage in their day-to-day lives. And while many people do have an internal list of what is important for life satisfaction, it is often the mundane elements of the daily routine that drive daily activities. Simple changes in these automatic behaviors can impact how you experience day-to-day life.

Cornerstone Behaviors of Time-based Activity Pacing:

- ***Pay attention*** to activities and behaviors that contribute to increased feelings of pain, fatigue and stiffness.
- ***Prioritize*** activities that you value as well as those that you need to do.
- ***Plan*** to reduce the occurrence of too much – too much sitting, too much standing, too much anything that results in you feeling worse.

ACTIVITY PACING ACCORDING TO TIME

Project AIM wants you to use TIME to tell you when to start and stop your activity. Time-based Activity Pacing is very different from the type of pacing that most people do. Most people pace their activities by tasks or by how they feel. The list below describes why these two methods are not as helpful as using TIME to pace your activities.

☒ TASK-BASED PACING

Task-based pacing is when rest breaks occur only after a task is completed. This is the way most people like to work - Start and finish task 1 before moving onto task 2. Unfortunately, this type of pacing can result in doing too much. Often, the act of finishing task 1 brings on an increase in tiredness and achy joints which are relieved by an extended rest period.

☒ SYMPTOM-BASED PACING

The other type of pacing people tend to do is symptom-based pacing in which rest breaks are taken only after a notable increase in fatigue or pain is felt. And, rarely do people use pacing to minimize their stiffness. The problem with this type of pacing is the same as task-based pacing – the rest break comes too late to be effective.

☑ TIME-BASED PACING

Time-based Activity Pacing tries to stop the cycle of "too much" by having you rest before you might finish a task *and* before you notice an increase in symptoms. For any given task, you think about how long you can be active before you start to get tired or your joints start to ache. Next, figure out how

much time you need to refresh your joints, muscles and mind. This is generally measured in minutes – from 1 to 2 minutes up to 10 or more. The exact time is up to you. Knowing this information allows you to plan your rest break for a time before your symptoms get too bad.

Time-based Activity Pacing is Hard

Time-based Activity Pacing asks that you use an absolute cue – TIME – to dictate your activity-rest behaviors. Both the task and symptom-based pacing strategies rely on relative cues – in other words, the task or symptoms. The long-term use of relative cues to balance activity and rest leads to an eventual decline in activity and decreased satisfaction. Admittedly, it might take you a little bit longer than normal to get any one activity completed when you first start using Time-based Activity Pacing. But, keep in mind that when you have finished, you'll actually feel better – your joints will be less achy, you'll feel less tired, and you won't be as stiff – because you never get to the point of "too much." The hardest part of Time-based Activity Pacing is stopping in the middle of a task.

Comment from Arthritis forum:

"I am learning how to pace myself. [I have been] most successful with domestic duties. I set a time limit. When that time is up, I stop, no matter what is unfinished"

Creating an Activity-Rest Balance using *On-off* Periods

The use of planned rest periods takes practice. While the terms *rest* and *activity* are sometimes used, a more accurate description is *on-off* periods. These *on-off* periods reflect whether or not you currently engaged in your target activity. How you spend your *off* period depends on many factors, but typically your effort level during your *on* period helps you decide on what you do during your *off* period.

The alternating *ON-OFF* periods allow you to create an optimal activity-rest balance for a given activity or task. The goal behavior of Time-based Activity Pacing is the participation in your activities according to a combination of planned *ON-OFF* periods.

Definitions of Time-based Activity Pacing Terms:

- ***Target Activity*** *– any task or activity you need or want to complete*
- ***ON Period*** *– the time you spend doing your target activity*
- ***OFF Period*** *– the time you spend rejuvenating for next ON period*

DURATION OF *ON* PERIODS

ON periods should be long enough to keep you engaged in your target activity, but short enough so that you do not experience an increase in your symptoms. Depending on the effort level of any particular activity, *ON* periods can be as short as a few minutes and as long as a couple of hours.

DURATION OF *OFF* PERIODS

Similarly, *OFF* periods should be long enough to minimize the stress on your body and to refresh you, but not so long that you can't re-engage in your target activity. Activities that are quite effortful or strenuous, or those that put a lot of stress on your joints, can alternate with longer *OFF* periods than less strenuous activities. Even still, most *OFF* periods last between a few seconds to several minutes. Regardless of the actual duration, the goal of the *OFF* period is to prepare your body and joints for the next on period of activity.

WHAT TO DO DURING AN *OFF* PERIOD

Some people are confused by the idea of an *OFF* period. The first question is usually, "what do I do?" How you spend your *OFF* period also depends on the effort level of your target activity. Activities that are strenuous, or those that put a lot of stress on your joints, usually require a "restful" period. On the other hand, activities that are sedentary, like sitting at the computer, watching TV, and reading, usually require an *OFF* period that breaks up long durations of immobility.

RESTFUL *OFF* PERIOD ACTIVITIES	ACTIVE *OFF* PERIOD ACTIVITIES
Deep breathing	Range of motion exercises
Application of ice	Stretching exercises
Stretching exercises	Walking
Sitting	Changing positions

Time-based Activity Pacing focuses on these planned *OFF* periods in your target activity to prevent symptoms from getting out of control whereas Symptom or Task-based Pacing is focused on recovering from a task or activity that was ultimately too long. The goal of the *OFF* period is always rejuvenation and restoration rather than outright rest.

Things to Consider when Planning Your ON-OFF Periods:

- ***INTENSITY*** *– how physically demanding is your target activity?*
- ***DURATION*** *– how long do you expect it will take you to finish your target activity?*
- ***BODY POSITION*** *– are you standing or sitting during your target activity? Are your knees and hips bearing the load?*
- ***MENTAL OR EMOTIONAL REQUIREMENTS*** *– is your target activity particularly stressful?*

SUMMARY

- Time-based Activity Pacing balances activity and rest using planned *ON-OFF* periods.
- These planned *ON-OFF* periods help you minimize the impact of your symptoms on your daily activities.
- Planning your *ON-OFF* periods using pre-planned time periods is more effective than waiting until you finish an activity or waiting until you symptoms are more severe.

SESSION TWO: LEARNING OBJECTIVES

1. Evaluate use of planned *ON-OFF* periods.
2. Identify barriers to the use Time-based Activity Pacing.
3. Develop a plan for overcoming barriers.

PART III

BEHAVIOR CHANGE IS NOT EASY

- Adapting the way you do an activity by alternating *ON-OFF* periods is asking you to change a behavior.
- Using TIME to help you plan how you accomplish your activities is counterintuitive to the way most people are conditioned.
- Adding a new behavior or changing an old one is not easy. Consider the number of times you or someone you know has tried to lose weight by dieting, or has tried to quit smoking, or has tried to exercise every day.

> *As many as 90% of people learning a new behavior do not actually change their behavior on their first try.*

If changing a behavior were easy, the world would be a place of super-fit, extraordinarily healthy, non-smoking super-beings. But alas, it is not easy. Project AIM is asking you to adopt a new behavior. In fact, Time-based Activity Pacing asks you to adopt a new behavior that is quite contrary to most people's preferred behavior – that is, working until you cannot work anymore.

BARRIERS TO SUCCESSFUL USE OF TIME-BASED ACTIVITY PACING

The next step in adopting Time-based Activity Pacing into your daily life is to examine the things that either helped or hindered you during your first attempts.

Barriers are things that impede your ability to use Time-based Activity Pacing. One of the most commonly-reported challenges is remembering to use it consistently. A second common barrier is difficulty in accepting that the preventive use of an *OFF* period can manage your osteoarthritis symptoms and increase activity.

Common Barriers to Using Time-based Activity Pacing

- *Forgetting to implement your Time-based Activity Pacing plan*
- *Lack of immediate benefit*
- *Lack of understanding by family and friends*
- *Lack of support by colleagues and supervisors*
- *Embarrassment at stopping to "rest" during an activity with others*
- *Thinking that it's not worth it*

Paying attention to the things that might get in your way can help you overcome them. Planning ahead so that you have a response to barriers removes the need to think about what to do when faced with a challenge. The more barriers that you can anticipate and plan for - keeping in mind that some barriers are a constant presence whereas others come and go - will make it easier to stick with Time-based Activity Pacing.

SUMMARY

- Barriers are things that get in your way of using your Time-based Activity Pacing program.
- Awareness of common barriers and when they are likely to occur is the first step to overcoming them.
- Planning alternative actions for common or frequent barriers can help you stick with your Time-based Activity Pacing program.

SESSION THREE: LEARNING OBJECTIVES

1. Evaluate use of planned *ON-OFF* periods.
2. Understanding lapses, high-risk situations & symptom flare-ups.
3. Establish long-term goals for continued use of Time-based Activity Pacing.

PART IV

MANAGEMENT OF OA

Management of osteoarthritis is a life-long affair. Some people take medications to reduce joint pain and inflammation, and others change their activities to accommodate their symptoms. While medicines for reducing pain and occasionally changing activities on a really bad day can work in the short term, neither is good long-term for helping maintain or even improve physical function. Time-based Activity Pacing is an ideal long-term management strategy. Now that you understand how to prioritize your activities and plan your *ON-OFF* periods according to time, you can always rely on that knowledge and skill.

LAPSES ARE LIKELY TO HAPPEN

Because it is hard to pace your activities according to a time schedule, it is expected that some days it will be easier than others to implement your *ON-OFF* plan, and that some days it won't happen at all.

A ***lapse* is a temporary break** in the implementation of a behavior. A deadline or unexpected event can thwart even the best time-based pacers. What separates the best time-based pacers from the occasional time-based pacers is that they recognize the lapse as being temporary and they start again.

> *The average former smoker quits 7 times before becoming a non-smoker.*

A **relapse is a return to old behaviors** – for example, overdoing your activities, not paying attention to possible barriers, and not planning ahead. Relapses are more likely during periods of illness or other medical complications. Relapses are more likely to occur if there are a lot of barriers to implementing Time-based Activity Pacing. And, unfortunately, relapses are more common if the benefit of the new behavior isn't realized right away. One of the goals of Time-based Activity Pacing is to preserve and increase physical function and activity over the long haul. Knowing that a behavior that

you do today will have an impact 5 years from now is one thing; believing it and remembering requires commitment.

A ***pro-lapse*** **is getting back on track** after a lapse. Frequent pro-lapses are OK. In fact, an ongoing pattern of lapses and pro-lapses is a perfectly acceptable way to maintain a desired behavior. People who set discrete and attainable goals are more likely to pro-lapse than relapse. In addition, self-monitoring (for example, using your timer to remind you of your ON-OFF periods; using a daily log to maintain of awareness of behaviors and their impact on symptoms) is a behavior that is associated with greater long-term behavior change success.

Minimizing Lapses, Maximizing Pro-lapses and Preventing Relapses

It is inevitable that something will arise that impacts your ability to use your planned *ON-OFF* periods. Sometimes these are circumstances that are outside of your control. And then there are circumstances when you do have the power and the freedom to make an informed choice about whether or not to use Time-based Activity Pacing.

Remember, lapses are OK, and are expected. At first thought, it might seem wise to minimize the frequency of their occurrence; however, a combination of lapses and pro-lapses is a viable means of incorporating a new behavior into your routine. The duration of the lapse is more important to manage than the occurrence itself. The longer a lapse goes on, the more likely it will transition to a relapse.

Lapses are more likely to occur during “high-risk” situations. High-risk situations are those that challenge your ability readily use your Time-based Activity Pacing skills. High-risk situations are generally associated with periods of increased stress and a perceived lack of control over the situation. During these times, things that are not typically barriers may become an extra challenge.

High-risk situations will occur. Your job is to challenge the situation and adapt in a way that allows you to behave pro-actively rather than reactively. Just as it is important to be aware of the relationship between your behaviors and symptom experience, it is also important to be aware of those things that are going to make it harder for you.

Symptom Flare-ups

Sometimes, despite your best efforts, you will experience an increase in symptoms. The fact is that one of the hallmark traits of osteoarthritis is the up and down nature of the symptoms. A flare-up can arise from any number of factors, many of which may be out of your control. For example, feeling a bit under the weather with a cold can worsen your symptoms, as can stress, or a change to your normal routine. The key to managing a flare-up is to first recognize it. You might notice that during a flare-up you'll feel achier everywhere, and not just in your bad knee or hip. You might feel tired even after resting.

If you notice these feelings, it is likely that you are having a flare-up. During these times, it is important to remain aware and accept the flare-up for what it is – a *temporary* increase in symptoms and nothing more. A flare-up does not usually mean that your arthritis is getting worse or that you are experiencing damage to the joint.

Equally important is the continued use of your Time-based *ON-OFF* plans, but with slight modifications. During a flare-up you should strive to continue Time-based Activity Pacing, but with slight decreases in the ON period combined with your normal *OFF* periods. Over a span of 3 days, gradually increase your *ON* period until you are back to your normal schedule.

Summary

- Temporary increases in symptoms are common with the osteoarthritis experience.
- You can adapt your usual Time-based Activity Pacing *ON-OFF* plans to accommodate how you feel on a bad day.
- Decrease your *ON* period by one-half; maintain your normal *OFF* period.
- Increase back to your normal *ON-OFF* schedule over 3 days.

PART V

TIME-BASED ACTIVITY PACING SUMMARY

Pay attention to behaviors and situations. Optimal use of Time-based Activity Pacing asks that you maintain a level of attentiveness toward activities and situations that contribute to increased feelings of pain, fatigue and stiffness.

- *Post reminder notes in places that lend themselves to over-doing it: at your computer, on your grocery list, near your cleaning supplies, etc.*
- *Enlist family and friends to help you maintain your awareness.*
- *Realize that the situations and activities that contribute to increased symptoms can change with the day, month and seasons. The daily log is a great way to notice seasonal and weekly patterns.*

Prioritize based on need and life satisfaction. When determining the importance of different activities, remember that priorities are fluid – something that was completely necessary last week might not be as important three weeks from now. Be sure to prioritize based on what you value as well as what you need. You can apply Time-based Activity Pacing to your leisure activities also.

- *Don't rely on the same ruler to gauge the importance of your activities day in and day out. Frequently assess the relative importance of your activities to allow for optimal planning.*
- *High priority activities should include activities that you have to do (such chores) and activities that you like and want to do.*

Plan ahead. Time-based Activity Pacing also asks that you plan to a level of detail that might seem excessive at first. Admittedly, it can be tedious and time-consuming to plan your social and work activities around the potential for "too much." But it works! Planning *ON-OFF* periods can minimize the ill effects of sitting too long or standing too much.

Remember:

- *Schedule active OFF periods during sedentary activities*
- *Schedule restful OFF periods for active activities.*
- *Scheduled ON-OFF periods can still be flexible; adapt them as needed.*
- *Set goals*

This program was designed to provide you with a foundation for ongoing self-management of your osteoarthritis. As a result of this process you now have knowledge about the role your behaviors play in your daily symptom experience, and you have a new skill, Time-based Activity Pacing, which you can use to minimize the impact of symptoms on your life.

FREQUENTLY ASKED QUESTIONS

WHAT IF I HAVE A QUESTION?

Your occupational therapist will be available to answer questions you might have about using Time-based Activity Pacing. Situations in which you might want to follow-up with your occupational therapist include:

- You have a big event (for example, family gathering, deadline at work, etc.) coming up, and you want guidance on how to use Time-based Activity Pacing;
- You want help revising your *ON-OFF* plan to accommodate a change in your lifestyle, or to prepare for an upcoming high-risk situation.

- You want an encouraging word to keep up with Time-based Activity Pacing, or help to overcome a barrier.
- You want to let your occupational therapist know that you're doing well.

WHAT IF I'M HAVING A REALLY BAD DAY?

Adjust your time-based *ON-OFF* plan to best fit your needs for that day. Sometimes our bodies do need more rest than usual. Recognizing when to follow your plan and when you might actually need to rest (as in to not move or to have freedom from strain or responsibility) is an important skill to develop.

WHAT IF I DON'T REMEMBER TO USE TIME-BASED ACTIVITY PACING?

Like any behavior that contributes to wellness and health, Time-based Activity Pacing only works when you actually remember to use your *ON-OFF* plan. Try using reminder notes and alarms to remind you when to start and stop your *ON* periods.

WHAT ELSE CAN I DO WHEN I NEED HELP?

- Review your Project AIM materials
- Start keeping a daily symptom and activity log again
- Plan ahead
- Acknowledge lapses and move on
- Contact your occupational therapist

Therapist name

Study phone number

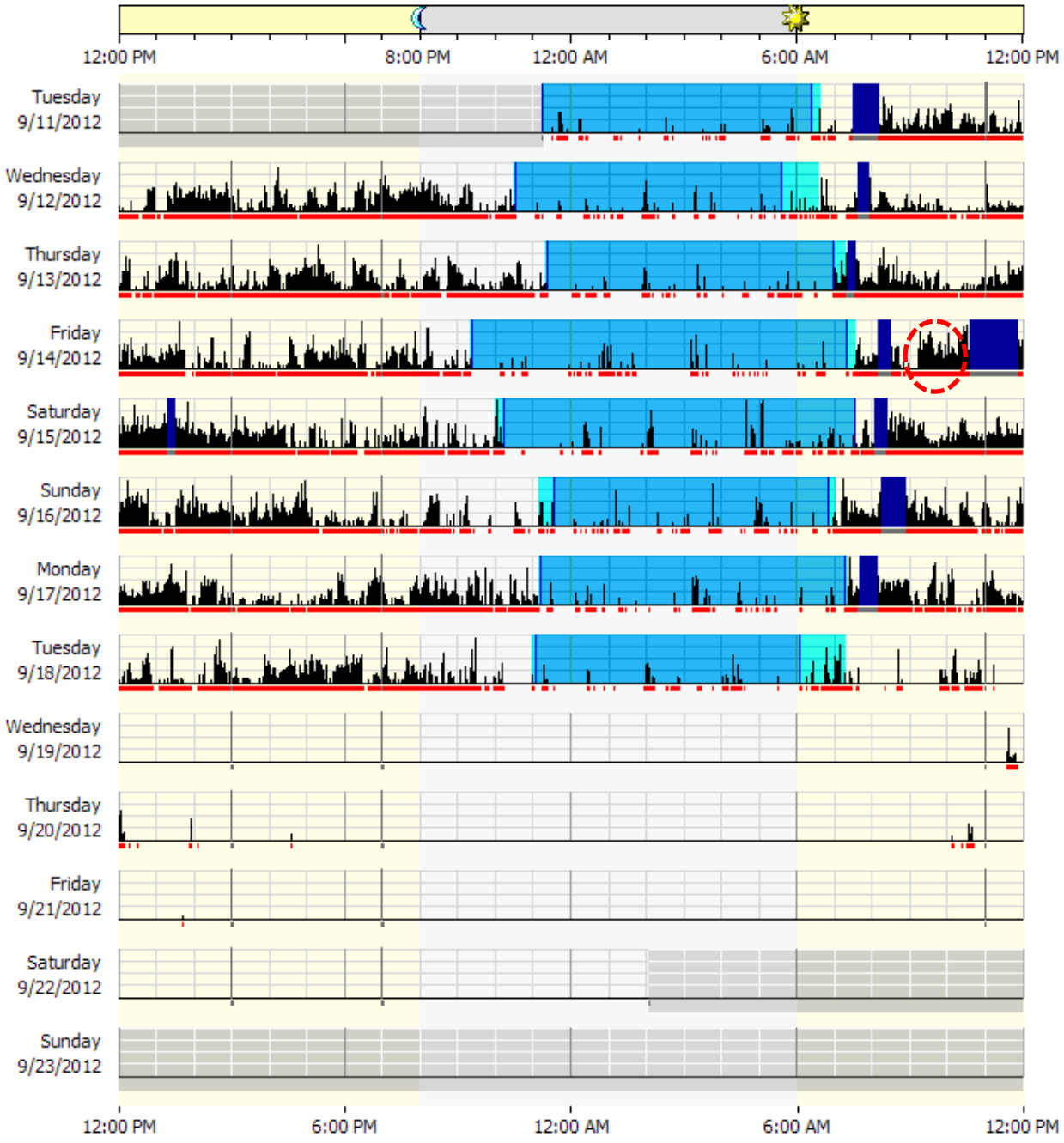
Project AIM – Arthritis Impact Management

University of Michigan, Department of Physical Medicine & Rehabilitation

Ann Arbor VA Healthcare System, Department of Research and Development

DAYTIME AND NIGHTTIME ACTIVITY OVER 7 DAYS*

The graph below shows all of the data collected while you were wearing the watch. The black lines represent your activity – a taller line generally indicates more strenuous activities, or activities that require a lot more movement. When you see a lot of taller black lines together that generally indicates a longer period of more strenuous activities (Saturday between 9:00 – 10:00 AM). The light blue areas indicate the time you were in bed trying to sleep.



The tables below show your daily activity values. The numbers reflect the height of the black lines seen on the previous graph. Higher numbers reflect more strenuous activities and lower numbers reflect less strenuous activities.

DAILY STATISTICS FOR PHYSICAL ACTIVITY DURING WAKING HOURS

Day	Wake Time	Bed Time	Total Activity	Average Activity	Peak Activity	Immobile Time
Wed	6:36 AM	10:29 PM	279713	306	943	148
Thu	6:34 AM	11:19 PM	231645	234	972	186
Fri	7:15 AM	9:22 PM	237502	284	1332	119
Sat	7:31 AM	10:00 PM	292727	383	972	108
Sun	7:33 AM	11:10 PM	295837	322	972	189
Mon	7:01 AM	11:09 PM	287863	309	1036	113
Tue	7:19 AM	10:59 PM	242945	267	1036	180

SUMMARY STATISTICS FOR PHYSICAL ACTIVITY DURING WAKING HOURS

	Day	Total Activity	Average Activity	Highest Activity	Immobile Time
Minimum	Thursday	231645	234	972	186 (19%)
Maximum	Sunday	295837	322	972	189 (21%)
Average		266890	301	1037	149 (17%)

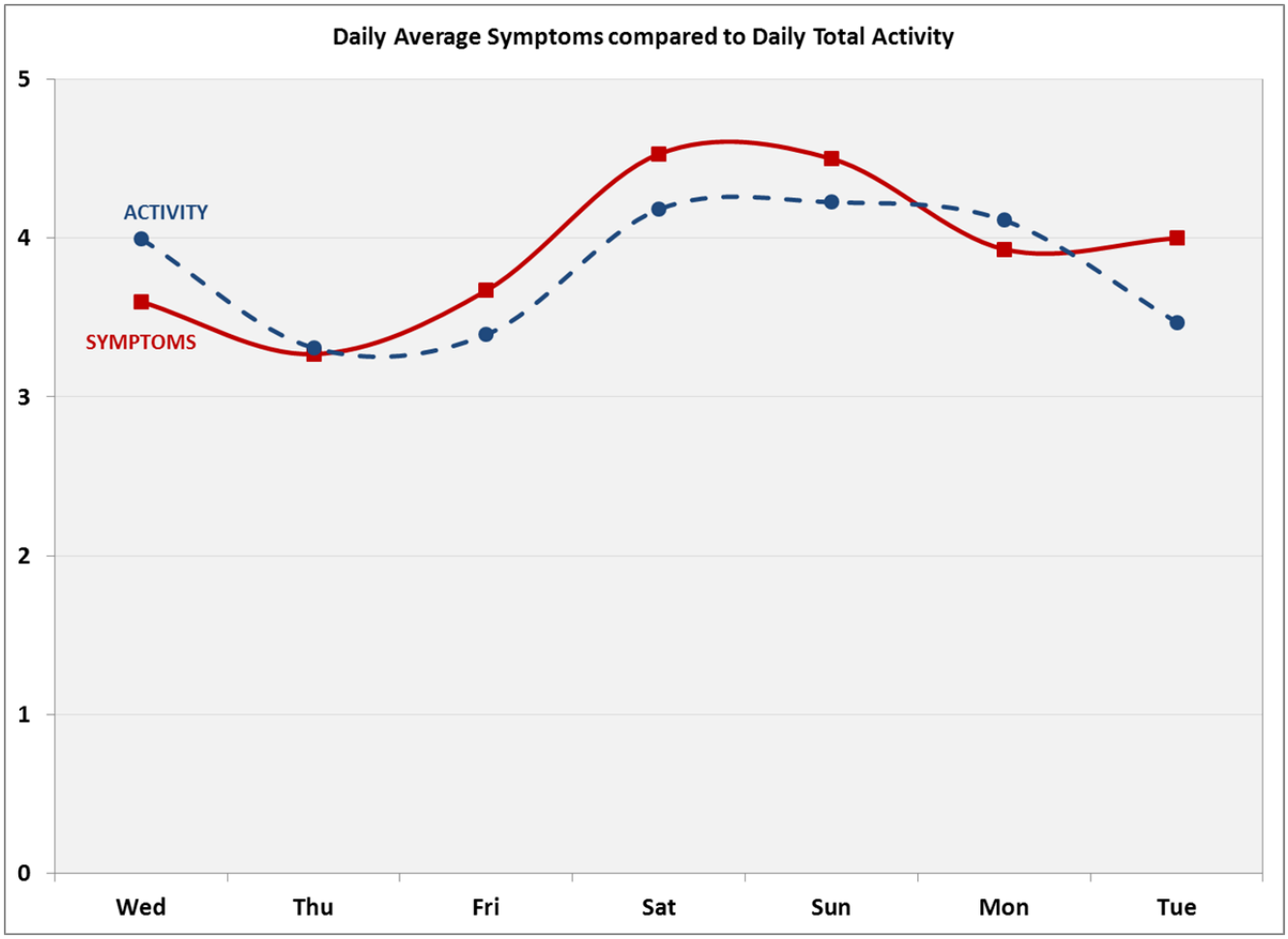
TOTAL ACTIVITY = all the activity you did between your wake-up and bed times.
AVERAGE ACTIVITY = your average activity per minute between your wake-up and bed times.
PEAK ACTIVITY = the highest amount of activity you achieved between your wake-up and bed times.
IMMOBILE TIME = the number of minutes you were not moving at all between your wake-up and bed times.
Election Day – Precinct Chairman

Percentile Values based on a sample of our previous research subjects: adults aged 50 years or older with knee or hip osteoarthritis.

Percentile	Total Activity	Average Activity	Highest Activity
5	170044	142	663
10	182532	168	691
15	203260	186	739
20	213863	193	770
25	234821	204	812
30	248127	218	834
35	**267468**	237	888
40	275702	249	895
45	287262	265	922
50	293001	278	946
60	312122	**300**	**984**
70	354297	322	**1114**
80	378980	359	1464
90	405927	407	1815
100	901118	563	2328

The highlighted boxes reflect the number that is closest to your values from the Summary Statistics table. The corresponding percentile rankings indicate how your activity compares to other people with osteoarthritis.

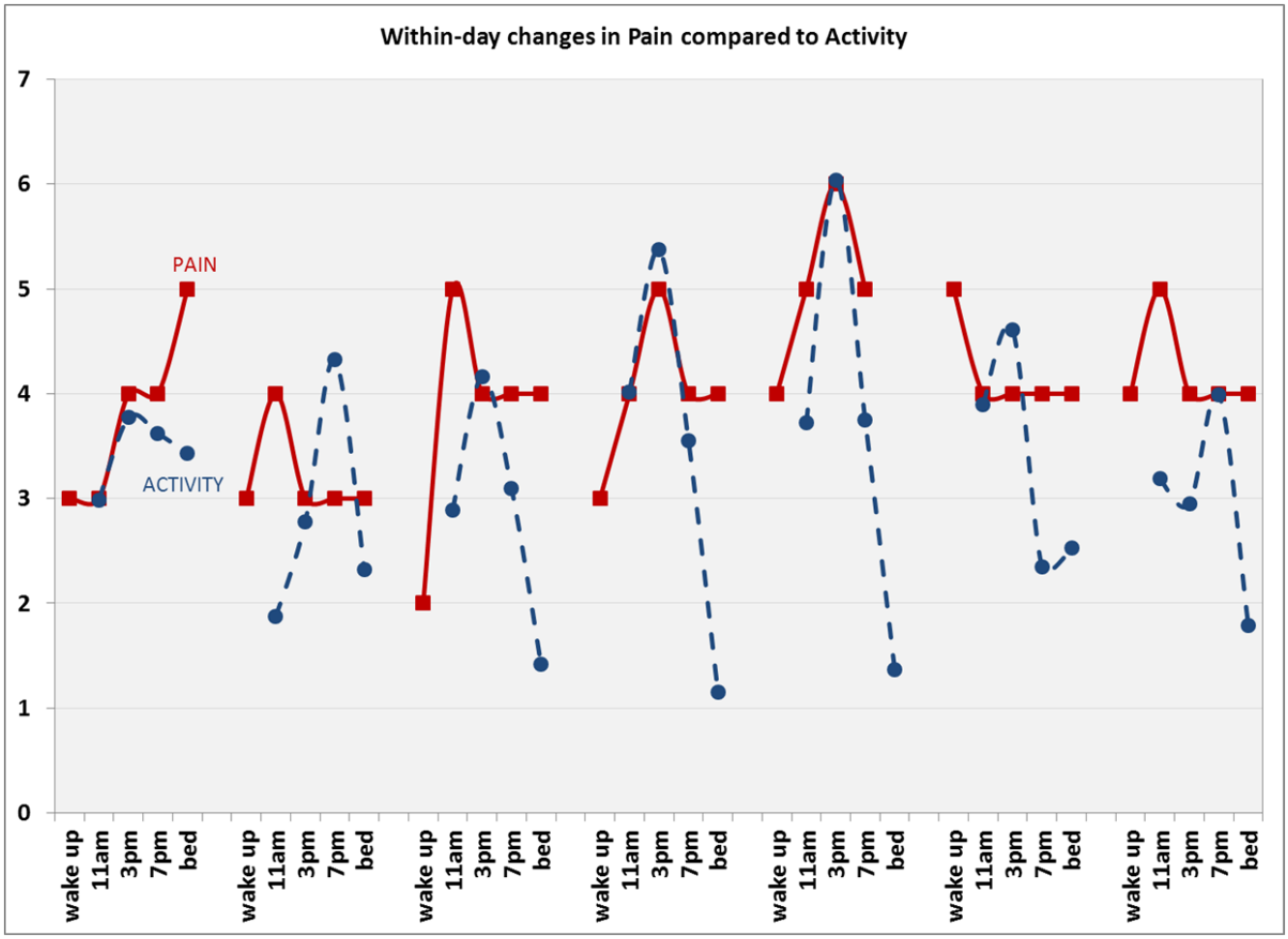
DAILY AVERAGE SYMPTOMS AND ACTIVITY ACROSS 7 DAYS



SUMMARY STATISTICS FOR SYMPTOMS

	Pain	Fatigue	Stiffness	Overall Symptoms	Days
Minimum	2	2	2	3.3	Thursday
Maximum	6	6	6	4.5	Sunday
Average	4	3.7	4.1	3.9	

ILLUSTRATION OF SYMPTOM PATTERNS



Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday

- Peak pain tends to coincide with intervals during which activities were largely weight-bearing.
- The absolute amount of activity doesn't seem to matter as much as much as body position and duration of activity.
- Time-based pacing efforts should focus on awareness of which specific activities (standing vs. walking) bring on the biggest increases in pain. For example, Saturday's activities involved a lot of standing (food prep) while Sunday's activities involved more walking (walking on track, grocery shopping). Both days show an increase in pain that coincides with the longer duration of weight-bearing activities.
- Planning short breaks that minimize joint stress during longer periods of weight-bearing activities should help to reduce the impact on pain levels.
- The key is to plan for the rest break *before* you notice an increase in pain.