The Basics: A Quick Reference for Use of the StepWatch 3 System

StepWatch Software

When installing the software and USB dock driver, carefully follow the instructions provided. The software needs to be kept in a location on your computer where you have write privileges. Do not move the StepWatch Library out of the program directory. You may move the entire StepWatch directory as a unit.

Once the program is running, you may wish to review the Preferences available in the Edit menu (PC's). Consult the manual or program Help for descriptions.

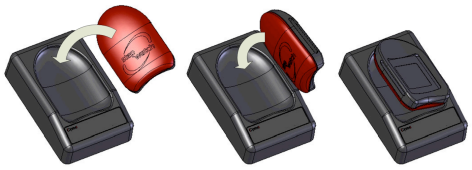
Using the Dock

To program or read the monitor, connect the dock to your computer THEN launch the software. The dock should have a blue and green light on. If the program is running and only the blue light is on, you probably need to select the correct communications port (Edit menu > Preferences > Communications).

The StepWatch software should NOT be running when you plug in or unplug the dock.

Placing the Monitor on the Dock

Place the monitor face down into the depression on the dock. (You do not need to remove the strap).



Removing the Monitor

As you program or read the monitor, the dock will show a red light at times.

DO NOT MOVE the monitor when the **RED** LIGHT is on.

It is OK to move the monitor when the **GREEN** LIGHT is on.

Care of the StepWatch

While the StepWatch is durable and can withstand drops from a counter to a hard floor, it is a precision instrument. We recommend that you counsel wearers to handle it with reasonable care.

The case is permanently sealed to prevent tampering and to ensure the instrument is waterproof. You may clean the monitor with mild soap and water or with alcohol. Rinse well with water. Do not use any other solvents or cleansers. Do not autoclave.

Do not leave the StepWatch in temperatures exceeding 46 C / 115 F (such as the dashboard of a car in warm weather) or in temperatures below -17 C / 0 F.

The anticipated battery life is at least 7 years. The battery can be replaced by Cyma.

Care of the Dock

The dock is not waterproof. To clean, wipe with a soft cloth moistened with mild soap and water or alcohol.

Wearing the Monitor

The monitor MUST be worn with the ROUNDED END UP. If it is upside-down, it will not count steps. Be sure to emphasize this with the wearer.

The monitor should be worn at the ankle. It may be on the medial or lateral side of either leg. It may be attached either by the velcro strap or the (optional) cotton lycra cuff.

The monitor is waterproof and does not need to be removed during swimming or bathing, but an extra (dry) strap or cuff may be wanted if it is to be worn in the water.

The StepWatch has been cleared by the FDA as a Class 2 Device. *US Patent #5,485,402*

Programming the Monitor

Verify that the dock's blue and green lights are both on. (If they are not, refer to Using the Dock.) Place the StepWatch on the docking station. From the Monitor menu, choose "Start Recording Activity"… Answer the following questions, then click the Start Button. Wait until the green light is again showing before removing the StepWatch from the dock.

Height

This setting strongly affects how quickly steps can be identified by the StepWatch. If you are estimating, it is better to guess shorter unless your client has restless, fidgety movements.

Quick Stepping

Do they regularly take short quick steps? Some activities like running with long strides, involve moving quickly over the ground without taking steps much more quickly than walking. They are not "quick stepping".

Are they likely to do the quick stepping activity often during the monitoring session?

Indicating YES for Quick Stepping has a fairly strong affect on the StepWatch performance, so if you are uncertain, choose NO. You might watch while the client demonstrates how they move during that activity.

Examples of quick stepping activities might be running or jogging with a short rapid stride, fast dancing, spinning on a bicycle, high-impact aerobics, or vigorously playing sports such as basketball, soccer, volleyball, or tennis.

Note: Bicycling appears to the StepWatch as walking. It is good to determine how quickly a person pedals if they ride a bicycle regularly.

Walking Speed

Evaluating a person's normal walking speed relative to their height is likely an unfamiliar concept. The intent is to identify how quickly steps are being taken rather than the absolute speed at which a person traverses the ground.

Consider a small child, an average height mother, and a very tall father walking together at the mother's normal comfortable speed., The child would be walking quite quickly, and the father slowly relative to their own height.

Most people will fall in the "average" category.

Range of Speeds

This setting influences the range of step rates the StepWatch will expect. For most people, a "moderate range" is appropriate. Some clients, however, rarely change their walking speed because of habit, preference, or physical limitation. They may have a "limited range."

Remember, a person must regularly do BOTH EXTREMES to qualify for the "wide range" setting. Examples of the slow extreme, where the leg is in the swinging phase for a long time, could be walking with a slow-moving elderly person or a young child or meandering window shopping. The fast extreme might be speed walking, jogging with a long stride, exercising on a stair master, or bicycling with a moderately fast cadence.

Leg Motion

From the time the client is in your presence, observe how they move. *Look at the motion of their leg and ankle rather than their whole gait.*

Dynamic/Fidgety:
If your client is especially fidgety or tends toward quick, abrupt movements, or taps their heels consider the "Fidgety and/or Dynamic" setting. Many children fall into this category.

Gentle/Geriatric:
If your client moves very slowly or gently, use the "Gentle and/or Geriatric" setting. This designation may also be appropriate for people who regularly work at a workbench or counter, or in a small space. When they demonstrate these activities, watch the monitor light blink to see if you are missing steps, if so consider using this setting. For persons who walk with a prosthesis, walker, cane or crutches watch the motion of the leg; often the leg swings forward fairly rapidly and a "Normal" setting is appropriate.

Normal:
Most people, including a number of older people, fall in the "normal" category.

Verify Settings

Once the programming is completed, you may wish to confirm your settings by watching the light on the top of the StepWatch blink one time per step as your client walks at their normal speed. You may also have them walk at the "slowest pace they would normally walk" and the "quickest pace they would normally walk."

Watch to see that the StepWatch is not double blinking on slow steps, or missing fast steps. Your client should not try to look at the monitor as this will change their walking.

If you are walking with your client, do not lead them or trail too far behind as this may influence their natural pace. If possible, stand still at the front, back or side and simply observe.

The number of times the monitor blinks is determined in Preferences.

Downloading the StepWatch

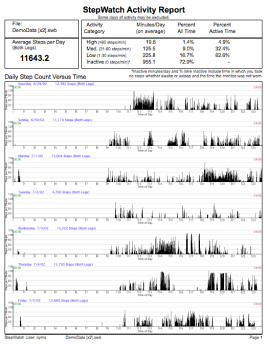
Wait to read the monitor until at least one minute after the last steps you want to have included in the data. Place the monitor face down on the dock and select "Read Recorded Activity" in the Monitor menu. Do not move the monitor while the dock's red light is on.

A file will open showing your client's activity. Navigate using the buttons on the top of the screen (Summary, Edit Time, etc.).

Step plots for each day show time (on 24 hour clock) across the bottom, and steps or strides per minute (depending on preference setting) on the vertical axis.

Remember to save the file. Note: The data are still in the monitor and may be "re-download" until the next time it is programmed.

Printing and Exporting Data, Analysis, and Reports

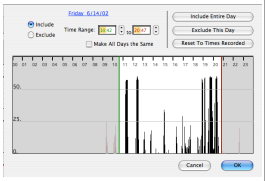


If you wish to perform your own calculations, the raw data may be exported to spreadsheet format using the Export Data… command in the File menu.

Analysis may be exported using the Export Stats… command in the File menu.

Various reports you may wish to keep with clinical or research records or give clients are available to print. After you choose the print command, a list of available reports will be presented. Check the reports you wish to print and the days to include. Note: the Week Report must have 7 days or less.

Filter Time To Include in Analysis



To change the time that is included in your analysis, double click on any day in the Edit Time window. An editing window will open where you may alter the time that is included. You can use your cursor to drag start and stop bars across the plotted data. If you do not see these bars, they are at both ends of your plotted data. You can also use the digital time controls, or select include and exclude buttons.

Measures Calculated for all *Included Time*

- Total step or stride counts (depending on preference setting)
- Time spent at low, moderate, and high activity (user definable)
- Number of steps at each activity level
- Inactive time
- Percentages of time and steps at each activity level
- Measures of burst and endurance (cardiovascular) activity

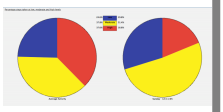
Batch Analysis

Coming Soon!

Database Tools

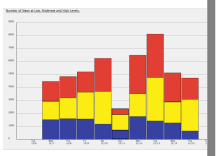
Once you have cleaned (filtered) your data, you may wish to populate a database that is available in the software. Several additional tools for analyses and graphical representation are available in the database. These include tracking of a person over time, comparison of an individual to a group, and comparisons between groups of people, or categories of monitoring sessions such as all baseline compared to all follow-up data. For information about using the database see the manual and/or help files.

Pie Charts



Two types of pie charts compare a chosen day to the average for the included time in your data file. One shows the steps and the other the percentage of time spent at high, moderate, and low activity. The time pie chart may include time spent inactive if you wish. Click on the numeric data for any day to view the pie chart for that day. Use "Export Graph…" in the file menu to export the image.

Bar Graphs



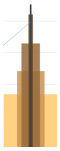
Bar graphs show minutes or steps accumulated at various activity levels for all of the days in the monitoring session. The selected combination of high, medium, or low activity levels is displayed. Click on the numeric data for any day to highlight the bar for that day. Use "Export Graph…" in the file menu to export the image.

Further Documentation and Assistance

More extensive description and documentation is available in the software help files and manual. The manual is oriented around sequence of actions, and the help files around the layout of the program menu.

If you have questions regarding the use of your Stepwatch system contact Orthocare Innovations Technical Support.

Sustained and Peak Activity Graphs



The Sustained Activity Chart shows graduated bars for the "best effort" each day in a continuous period of 1, 5, 20, 30 and 60 minutes. The 1 and 5-minute scores represent best "burst" performance. The 20, 30, and 60-minute scores relate to cardiovascular or endurance efforts.

The blue line shows the peak activity index which is the average of the highest 30 minutes of the day regardless of when they occurred (i.e. no requirement for continuity).

The average for the entire monitoring period is shown as well as the scores for each individual day.

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