

Vivago ^{ACTIVE} SLEEP

User manual



Contents

Good and sufficient sleep

A person needs sleep to stay healthy	3
Vivago Sleep – the easy way to monitor sleep	3

Using the Vivago® Sleep

Fastening the watch	4
The buttons function	4

Setting mode

1. Setting time and date

1.1 Setting the time	5
1.2 24/12h display	5
1.3 setting the year	5
1.4 Setting the month	5
1.5 Setting the day	5
1.6 Type of date field	5

2. Setting the alarm

2.1 Alarm on/off/automatic snooze	6
2.2 Setting the wake-up time	6

3. Other settings

3.1 Setting the limit value for sleep	6
3.2 Resetting the memory	6

What does Vivago Sleep tell you?

1. Watch	7
2. Alarm (WAKE)	7
3. SLEEP	7
3.1 Cumulative sleep time	7
3.2 Last nights sleep time	7
3.3 Average sleep time (ST 7d, Sleep Time 7days)	8
3.4 Average sleep time (ST 4w, Sleep Time 4 weeks)	8
3.5 The shortest sleep time, 7 days (ST 7d, Sleep Time 7 days, MIN)	8
3.6 The longest sleep time, 7 days (ST 7d, Sleep Time 7 days, MAX)	8

Using the Vivago Sleep

Using water when doing housework	9
Shower, bath and sauna	9
Removing and storing the watch	9
Cleaning the watch	9
Charging the watch	9
Maintenance	9
Liability	9
Warranty	10

Good and sufficient sleep

These days the significance of sleep for well-being is emphasized more and more, and gradually the importance of sleep for health is becoming clear too. Humans need regular sleep. A person needs sleep to learn, remember things, maintain his or her health, grow up and rest, among other things. Regular and sufficient sleep recharges a person's body and mind and restocks energy reserves, which are required in the challenges of the next day. Naturally, lack of sleep affects a person's capability to manage with everyday chores. Adults need an average of 7–9 hours of sleep every night.

A person needs sleep to stay healthy

Those who stay awake long consume glucose, the fuel of the brain, at a high rate. During sleep they then restock their fuel reserves. Even minor daily sleep deprivation reduces a person's daily performance. Condition of the brain after a person has been up all night can be compared with intoxication level of 1 per mille: performance has deteriorated from the normal level, a person becomes irritable and is prone to accidents. Continued sleep deprivation reduces performance, weakens learning results, lowers the ability to concentrate and increases restlessness. Sleep deprivation that has accumulated over a couple of days is easily corrected, when one sleeps in.

Sleep is important for learning, because sleep stores what has been learned during the day into memory. The importance of sleep is underlined in learning of new things, because during sleep material that has been learned becomes stronger and sinks in. That is also when the brain moves things from working memory to active and long term memory.

You might think that staying awake helps you lose weight, but that is not the case. Insufficient sleep makes you fat in two ways. Sleep is connected to the balance of hormones called leptin and ghrelin, which regulate appetite. When a person sleeps too little, leptin level in the blood falls. Leptin tells you the situation of the fat reserve. A low leptin level sends the body a message about energy deficiency: a person will eat even though there is no need for it. The appetite for fat and carbohydrates, in particular, will grow. Ghrelin level, on the other hand, goes up when a person sleeps too little. Ghrelin is secreted in the stomach. A high ghrelin level also tells the brain that you must start eating. Therefore, sleep deprivation can make you fat due to changes in the hormone balance.

The whole body needs sleep, because sleep is crucial for your health and constitution. Indeed, in medical studies prolonged lack of sleep has been linked to several diseases. Sleep deprivation changes the hormone balance and thus exposes you to disorders in blood pressure and sugar metabolism. A person who sleeps too little runs the risk of being stricken with heart and vascular diseases or adult diabetes. During sleep, the human body secretes many agents that are connected to immunity. Lack of sleep weakens the body's defense system and thus exposes a person to various diseases, such as infections and inflammations. If you sleep too little, your immunity deteriorates and you have a higher risk of inflammations.

Vivago Sleep – the easy way to monitor sleep

With the Vivago Sleep monitor it is very easy to follow the sleep times and make sure you get enough sleep to stay healthy and to wake up refreshed to the challenges of the next day. Vivago sleep tells you how much you have slept previous night, the average sleep time for 7 days and 4 weeks and also the minimum and maximum sleep times for last 7 days. The trend indicator arrow shows you, at a glance, if you last night have slept more or less than you in average do.

Using the Vivago® Sleep

The Vivago Sleep monitor collects information of your activity level. The collecting of data begins when you start using the watch. The first information is ready to be studied after one night's use but the full benefit of your watch you get after one months use, when it has collected enough data.



Fastening the watch

Fasten the watch on your wrist so that it feels comfortable and does not restrict your wrist movements. However, please note that it should be tight enough to ensure that the bottom face of the watch is in close contact with your skin, even when you move your arm around. This is important, because your watch can only monitor the activity level and physiological signals when it is in direct contact with your skin. The Watch is too loose if it can be rotated. Do not insert pads or other materials between the watch and the wrist.

The watch knows if it is on the wrist or not. If the watch is removed from the wrist or it is too loose on the wrist, it stops measuring activity. From this time there will not be measurement data available.

The buttons function

The watch has three buttons: **MODE**, **VIVAGO** and **LIGHT**. With the **MODE** and **VIVAGO** buttons you can browse through the different menus, see figure below. By Pressing the **LIGHT** button the background light will switch on. The light will automatically switch off after 12 seconds.

Setting mode

By a long push on **LIGHT** and **MODE** buttons simultaneously you enter the setting mode. The setting mode depends on in which display mode you enter the settings. The chart below shows how to enter different setting modes. Not pushing any button for 60 seconds will, from all modes, return the watch to the basic watch mode.

In the set up mode the buttons work as follows:

- **LIGHT**: Changes settings.
- **MODE**: Changes the numbers, for instance from hours to minutes when setting the time.
- **VIVAGO**: Confirms the setting and moves you to next set-up mode.



1. Setting time and date

Make sure the watch shows time, in other words is in watch mode.

1.1 Setting the time

- Push **LIGHT** and **MODE** buttons simultaneously until the text: TIME appears on the display. In this mode you can set the time.
- The hour starts blinking.
- Set the right time by pushing the **LIGHT** button.
- Proceed to setting the minutes by pushing **MODE** button. The minute starts to blink.
- Set the minutes by pushing the **LIGHT** button.
- When the time is correct push the **VIVAGO** button. The watch will move to next settings.

1.2 24/12h display

- The text: CLOCK appears on the display. In this mode you can choose if you watch shows the time in 24 or 12h.
- On the display the text 24H or 12H starts blinking, depending on which time mode the watch has been in.
- By pushing **LIGHT** button you can change the setting.
- When you have chosen the time mode you prefer, push **VIVAGO** button and the watch moves on to next set up.

1.3 setting the year

- The text: YEAR appears on the display. In this mode you set the right year.
- The last digits of the year that has been set starts blinking.
- By pushing **LIGHT** button you can change to the correct year.
- When you have chosen the year, push **VIVAGO** button and the watch moves on to next set up.

1.4 Setting the month

- The text: MO. appears on the display. In this mode you set the right month.
- The month that has been set to the watch starts blinking.
- By pushing **LIGHT** button you can set the right month.
- When you have chosen the month, push **VIVAGO** button and the watch moves on to next set up.

1.5 Setting the day

- The text: DAY appears on the display. In this mode you set the right day of the month.
- The day that earlier has been set to the watch starts blinking.
- By pushing **LIGHT** button you can set the right day.
- When you have chosen the day, push **VIVAGO** button and the watch moves on to next set up.

1.6 Type of date field

- The text: VIEW appears on the display. In this mode you define what is shown in the field above the date when the watch is in time mode.
- Depending on the mode the watch has been in one of the texts below starts blinking in the display.
- By pushing **LIGHT** button you can determine which of following options is shown:
 - 14.6. (day. month) date - MON or TUE, WED, THU, FRI, SAT, SUN, weekday - Empty field
- When you have chosen the type of date field you prefer, push **VIVAGO** button and the watch goes back to time mode



MODE	1. Watch	Settings: LIGHT + MODE	Change value	Next value	Confirm/next setting
	<ul style="list-style-type: none"> ▶ Setting the time ▶ 24/12h display ▶ Setting the year ▶ Setting the month ▶ Setting the day ▶ Type of date field (d.m / day / empty) 		LIGHT	MODE	VIVAGO
			LIGHT	MODE	VIVAGO
			LIGHT		VIVAGO
			LIGHT		VIVAGO
			LIGHT		VIVAGO
MODE	2. Alarm	Settings: LIGHT + MODE	Change value	Next value	Confirm/next setting
	<ul style="list-style-type: none"> ▶ Alarm (off / automatic snooze / on) ▶ Setting the wake-up time 		LIGHT		VIVAGO
			LIGHT	MODE	VIVAGO
MODE	3. Sleep	Settings: LIGHT + MODE	Change value	Next value	Confirm/next setting
	<ul style="list-style-type: none"> ▶ Limit value for sleep 1-10 (1=sensitive, 10=ins., default=4) ▶ Clearing the memory (no / yes) 		LIGHT		VIVAGO
			LIGHT		VIVAGO

2. Setting the alarm

Move to the Alarm menu by pushing **MODE**. (Menu 2, see menu structure). On the display is the text **WAKE**. If the Alarm is activated, the display shows the wake-up time, if not two lines (-:-) appear on the display.

2.1 Alarm on/off/automatic snooze

- Push **LIGHT** and **MODE** buttons simultaneously, until the time or -:- disappears from the display. The text: **WAKE** is still shown on the display. In this mode you can activate or deactivate the alarm and the automatic snooze.
- Depending on the mode the watch last has been in one of the texts below starts blinking in the display.
- By pushing **LIGHT** button you can determine which of following alarm options you prefer:
 - OFF, alarm off
 - AUTO, snooze activated
 - ON, normal alarm on
- When you have activated or deactivated preferred alarm, push **VIVAGO** button. If you have chosen OFF, the watch automatically returns to alarm menu where two lines are shown -:-. If you chose ON or AUTO, the watch moves to alarm settings.

2.2 Setting the wake-up time

- The text: **WAKE** appears on the display. In this mode you can set the wake-up time.
- The hour on the watch starts blinking.
- Set the right hour by pushing **LIGHT** button.
- Proceed to setting the minutes by pushing **MODE** button. The minute starts to blink.
- Set the minutes by pushing the **LIGHT** button.
- When the wake-up time is set push the **VIVAGO** button. The watch moves back to wake menu, where the text: **WAKE** and the time you just set appears.

3. Other settings

Move to sleep menu by pushing **MODE** button. (menu 3, see menu structure).

3.1 Setting the limit value for sleep

- Push **LIGHT** and **MODE** buttons simultaneously, until the text **SLEEP** appears on the display. In this mode you can set the limit values for sleep, in other words at which activity level the watch assumes you sleep.
- The limit value starts blinking on the display. The limit blinking is the same as the last set sleep limit value.
- By pushing **LIGHT** button you can determine which limit value from 1-10 suits you. The default value is 4. Choose a low limit value if the watch counts too long sleep times for you. Choose a high limit value if you know your sleep is restless or the watch counts too short sleep times for you.
- When you have chosen the limit value for sleep, push **VIVAGO** button. The watch returns to the next menu.

3.2 Resetting the memory

- The text: **CLEAR** appears on the display. In this mode you can clear the watch's measurement data and memory.
- The text: **NO** starts blinking.
- You can cancel the clear operation by pushing the **VIVAGO** button.
- To clear the memory choose **YES** by pushing the **LIGHT** button and confirm by pushing the **VIVAGO** button.
- Please note that this will reset all settings.

What does Vivago Sleep tell you?

In the following chapter the different menus and features of the Vivago Sleep are described.

1. Watch

In the basic display mode the watch shows the time and the date or alternatively the day of the week. On the displays right side there is a watch symbol.

The watch can be in either 12 or 24 hours mode. When using the 12 hours mode am/pm will be shown on the display. The date is shown in either day.month or just in weekday (mon, tue, wed, thu, fri, sat, sun). The field can also be empty. See watch settings, if you like to set the time and date or change the watch or date layout.

The watch will always, from all menus, return to the basic watch mode in 30 seconds if no buttons have been pushed. By a long push of **MODE** button you can always immediately return to watch mode.

2. Alarm (WAKE)

By once pushing the **MODE** button you will see the time of wake up alarm. The watch symbol is still on the right side of the display. If the display shows two lines on the place of the time the alarm is not activated. To set the alarm time, see watch settings.

The wake-up beep starts on the chosen time and stops by pushing any button. The beep will also automatically end after one minute.

It is possible to set an automatic snooze (see watch setting). When the snooze is activated the watch will wake you up only when it notices that you have moved after the set wake-up time. The wake-up will at the latest start half an hour after set wake-up time. This way, if you sleep peacefully and do not move, the snooze automatically gives you 30 min of extra sleeping time. If you activate the snooze and for example set your alarm on 7:00 the watch wakes you up between 7:00 and 7:30 when you start to move but at the latest at 7:30.

3. SLEEP

By pushing the **VIVAGO** button in this menu you enter the sleep displays (3.1 – 3.6). You can browse these submenus by pushing **MODE** button. By again pushing **VIVAGO** button in any submenu you get back to the upper menu. The sleep times are calculated from 20.00 to 12.00

3.1 Cumulative sleep time

This mode shows the cumulative sleep time (at 20.00 - 12.00) for the night. On the right side of the display there's a symbol of sleep. The number is updated once an hour and will show you the cumulative sleep time during the night. In the daytime, after 12.00, the number will represent your total sleep time for the previous night.

The sleep time is shown in hours and minutes. If there is not enough data collected, if you have not worn the watch continuously, two lines (-:-) appears on the display.

3.2 Last nights sleep time

This mode, graphically shows, the movement activity (activity histogram) measured by the watch and the calculated sleep time (on the picture it is 7 hours 46 minutes) from the present night. On the right side of the display there is a symbol of sleep.

One column of the histogram describes the average of one hour of movement activity. The picture is being drawn to the display one column at a time and shows movement activity from the present night between 20:00-12:00 o'clock. During the drawing the display shows which hours activity it concerns. When the entire picture has been drawn the display shows the total time of sleep last night. From noon onwards you can see the complete histogram and your sleep hours from the previous night.

The watch measures your wrist movements. It will detect that you sleep when there is only very little movements for long enough time. Because of this it is possible to count an estimate of your sleep time. The height



of the columns on the display describes your sleep. If you have slept for an entire hour there will not be a visible column. Therefore a continuous good sleep of 8 hours will show as blank period in the histogram. Short awakenings might not show in the display, because the column height describes the average movement.

The arrow on the right side of the histogram indicates if your sleep time is longer (arrow up), shorter (arrow down) or about same (arrow linear) than your average sleep time during the last four weeks.

Because the sleep time calculation is based on the movement measurement, the displayed sleep length might not totally reflect your own observation of sleep. If you in the evening for instance very peacefully watch TV, the watch might count this as sleep time even though you are awake.

If there is not enough data collected, if you have not worn the watch continuously, two lines (- : -) appears on the display.

3.3 Average sleep time (ST 7d, Sleep Time 7days)

In this mode the display shows the average sleep time for the last 7 days (on the picture it is 8 hours 20 minutes). The symbol for sleep is shown on the right side of the display. The data up-dates at noon every day.

If there is not enough data from the last 7 days collected to measure the average, if you have not worn the watch continuously, two lines (- : -) appears on the display.

3.4 Average sleep time (ST 4w, Sleep Time 4 weeks)

In this mode the display shows the average sleep time for the last 4 weeks (on the picture it is 8 hours 5 minutes). The symbol for sleep is shown on the right side of the display. The data up-dates at noon every day.

If there is not enough data from the last 4 weeks collected to measure the average, if you have not worn the watch continuously, two lines (- : -) appears on the display.

3.5 The shortest sleep time, 7 days (ST 7d, Sleep Time 7 days, MIN)

In this mode the display shows the shortest sleep time for the last 7 days (on the picture it is 6 hours 5 minutes). The symbol for sleep is shown on the right side of the display. The data up-dates at noon every day.

3.6 The longest sleep time, 7 days (ST 7d, Sleep Time 7 days, MAX)

In this mode the display shows the longest sleep time for the last 7 days (on the picture it is 8 hours 50 minutes). The symbol for sleep is shown on the right side of the display. The data up-dates at noon every day.

Using the Vivago Sleep

Using water when doing housework

The Vivago Sleep watch is waterproof. You do not need to take the watch off while for example cleaning, washing your hands or doing the dishes. Chemicals and detergents that contains solvents like alcohol might damage your watch.

Shower, bath and sauna

You can wear the watch in the shower and bath. The watch cannot be used in warm conditions as in a sauna. Do not wear the watch in the sauna.

Removing and storing the watch

If you take off the watch do not leave it in direct sunlight. High temperatures might damage the watch. Keep the watch out of reach of children and pets.

The watch automatically identifies if it is on wrist. In the field of date on the display the text: WRIST and date will alternate when the watch is removed from wrist. When the watch is off wrist the measurement of activity will not function. If needed it is possible to adjust the sensitivity of the watch's on wrist identification.

Cleaning the watch

Regular cleaning of the watch is of utmost importance to ensure that the measurement function works properly. If the watch is in constant use, it is good to clean it once a week. Clean the bottom face of the watch and then inside of the straps with a damp, soft, non-fluffy cloth. You can use mild soap or washing liquid. Dry thoroughly with a dry cloth.

Do not use washing liquids that contain solvents like alcohol. These might damage the plastic parts of the watch. Do not scrape or scratch your watch.

Charging the watch

The watch has a rechargeable battery, which needs to be charged every six months using the charger included in the package. A symbol of a battery appears on the right side of the display when the battery is getting empty. The text BATT will also blink the display.

Place the charger on the watch as shown on the picture and plug the charger in the power socket. Make sure the charger is correctly placed on the watch. Place the charger on the same side as the **MODE** button.

When the charger is correctly attached and it starts to charge the watch, a symbol of the charging process appears on the display. When the battery is full the display shows a picture of a full battery. You can detach the charger from the watch and the socket.

Maintenance

Regular cleaning of the watch is essential to assure that the product works correctly. The battery must be charged with about 6 months intervals.

IST Oy is responsible for the service of damaged products.

Liability

The watch is not a medical appliance, and it is not intended for diagnosing or monitoring medical conditions. The manufacturer is not responsible for malfunctions of the system, which are caused by the system being used and maintained against the manner described in the operating instructions.



Warranty

The Vivago Sleep, manufactured by IST International Security Technology Oy, has a warranty of 12 months from purchase date. The warranty covers the cost of repairing any defect in the system caused by faults in assembly, manufacture or raw materials.

The warranty does not cover any damage that is caused or occasioned by improper use or user's negligence. It does not cover any damage caused by the system not being used and maintained in the manner described in the operating instructions, nor by an external factor outside the manufacturer's reasonable control or normal wear and tear.

Important!

- The watch monitors your general well-being. It should not be used to monitor a specific medical condition.
- The watch is manufactured of non-irritant components.
- Keep the product dry and clean. Rain, humidity and various fluids may contain chemical compounds that can corrode the product materials.
- Do not open the product, this damages the product. Opening the product should only be done by IST Oy.
- Do not drop, hit or shake the watch. Rough handling may damage the electrical circuits inside the product.
- Do not paint the product. Paint may inhibit its proper function.



IST International Security Technology Oy • Melkonkatu 16 A • FIN-00210 Helsinki • Finland • www.ist.fi
IST is an ISO 9001:2000 and ISO 13485:1996 certified company.