Clinical Trial Results

Drug Studied: JZP-110, also known as solriamfetol

A trial to learn about long-term use of solriamfetol by people with excessive daytime sleepiness caused by obstructive sleep apnea or narcolepsy

Jazz Pharmaceuticals®

Thank you!

Thank you to the people who took part in this clinical trial to study JZP-110, also known as solriamfetol or Sunosi®. The participants in this and other clinical trials helped researchers learn more about how solriamfetol works in people who have excessive daytime sleepiness caused by obstructive sleep apnea or narcolepsy.

Jazz Pharmaceuticals sponsored this trial and thinks it is important to share the results with the trial participants and the general public.

If you participated in the trial and have questions about the results, please speak to someone at your trial site, or talk to your doctor.

It is important to note that this summary only shows the results of a single trial. Other trials could have different results. Researchers and health authorities look at the results of many trials to determine which drugs work and how safe they are. It takes many participants in multiple trials around the world to help answer these questions.

What has happened since the trial ended?

The participants were in this trial for up to 1 year, but the entire trial took about 2 years and 7 months to finish. The trial started in May 2015 and ended in December 2017.

Jazz Pharmaceuticals reviewed the data when the trial ended and created a report of the results. This is a summary of that report. You can find more information about this trial in the websites listed at the end of this summary.

Why was the research needed?

Obstructive sleep apnea, also called OSA, and narcolepsy are chronic sleep disorders.

People with **OSA** have short periods during sleep when they stop breathing because the muscles in their throat are not working properly to keep their airway open. There are treatments to manage OSA and improve nighttime breathing. One of the symptoms of OSA is feeling very sleepy during the day, a condition known as **excessive daytime sleepiness**.

Solriamfetol is a drug that is thought to affect 2 chemicals in the brain that help keep people awake during the day. Solriamfetol was not designed or studied as a treatment for the causes of OSA. But researchers studied it as a possible treatment for excessive daytime sleepiness caused by OSA.

People with **narcolepsy** may fall asleep when they are supposed to be awake. Some people with narcolepsy experience episodes of sudden muscle weakness, also called cataplexy, which can make it difficult to talk or move. There is no cure for narcolepsy, but there are medications and healthy lifestyle habits that can help manage daytime symptoms. Researchers also studied solriamfetol as a possible treatment for excessive daytime sleepiness caused by narcolepsy.

The main questions the researchers wanted to answer in this trial were:

- What medical problems did the participants have during long-term use of solriamfetol?
- Did solriamfetol help participants feel less sleepy during the day after 6 months of daily use?

Who took part in the trial?

To answer these questions, the researchers asked for the help of men and women who took part in 1 of 7 previous clinical trials of solriamfetol. All of the participants joined their first clinical trial of solriamfetol because of excessive daytime sleepiness caused by OSA or narcolepsy.

There were 643 participants in this trial from 79 trial sites in the United States, Germany, Canada, Finland, France, the Netherlands, and Italy. There were 337 men and 306 women. Everyone in this trial was 18 to 76 years old when they joined.

What kind of trial was this?

This was a Phase 3 trial. In a Phase 3 trial, a drug is usually tested in a large number of participants with a specific disease or condition. Drugs tested in Phase 3 trials have already been studied in smaller trials. Phase 3 trial participants help researchers learn more about how a drug works and how safe it is.

During most of the trial, the participants took one of the following treatments every morning:

- Solriamfetol 75 milligrams
- Solriamfetol 150 milligrams
- Solriamfetol 300 milligrams

For 2 weeks in the middle of the trial, some of the participants kept taking one of these doses of solriamfetol, while the others switched over to taking a **placebo**.

A placebo looks like the trial drug but does not have any real medicine in it. When participants take a placebo, they follow the same steps in a trial as someone who takes the trial medicine. The only difference is whether or not the participant gets the trial drug. This helps researchers better understand the actual effects of the drug.

What happened during the trial?

Before treatment started, people who wanted to join the trial met with a trial doctor.

For some participants, this visit was also the last visit in their first clinical trial of solriamfetol. For other participants, this visit happened after they finished their first trial.

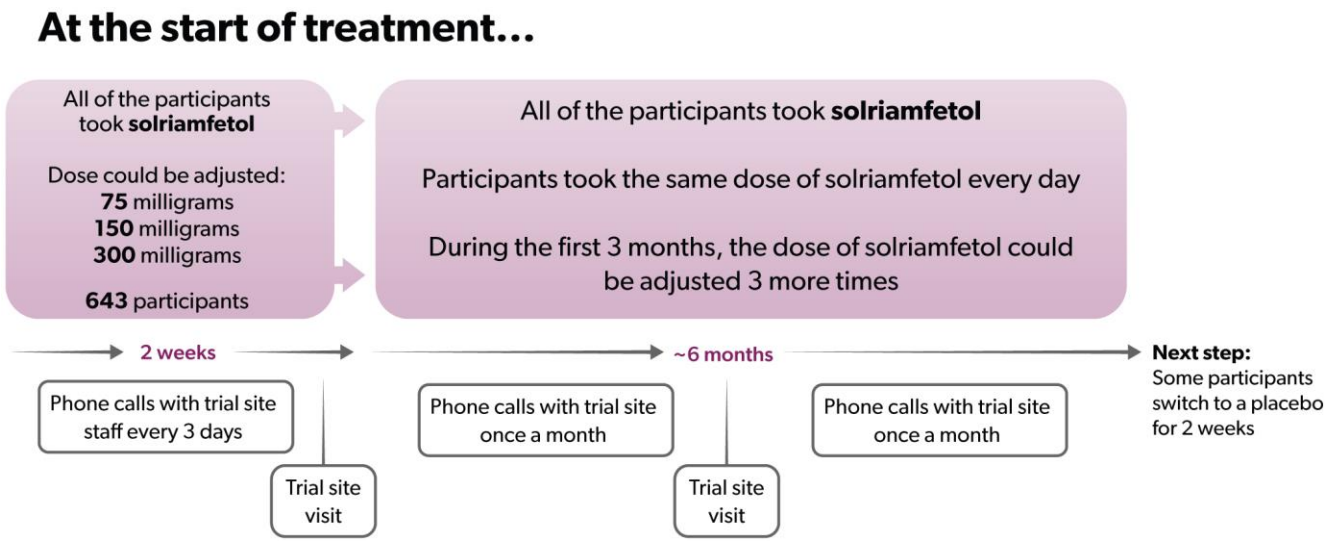
The trial doctors gave everyone a full check-up and made sure they were healthy enough to join.

During treatment, the participants took their assigned treatment every morning.

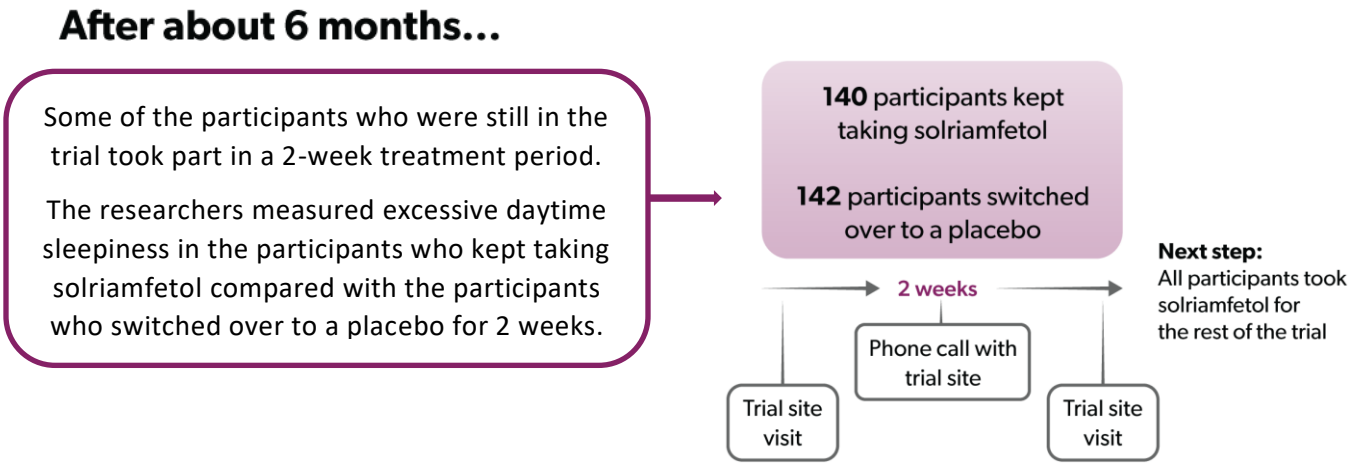
For the first 2 weeks, the participants worked with the trial doctors to adjust their dose of solriamfetol. All of the participants started treatment with solriamfetol 75 milligrams each day. The trial doctors increased the dose every 3 days – first to 150 milligrams a day and then to 300 milligrams a day – if they thought a higher dose might help participants better control their excessive daytime sleepiness.

The trial doctors might not have increased the dose if they thought a participant would have more medical problems with a higher dose. They might have decreased the dose – from 300 milligrams to 150 milligrams or from 150 milligrams to 75 milligrams – if they thought a participant would have fewer medical problems with a lower dose.

For the next 6 months, the participants took the same dose of solriamfetol every morning. During the first 3 months, the dose they took could be adjusted up to 3 more times. Otherwise, the dose they took – 75 milligrams, 150 milligrams, or 300 milligrams – was the dose they were taking at the end of the first 2 weeks.

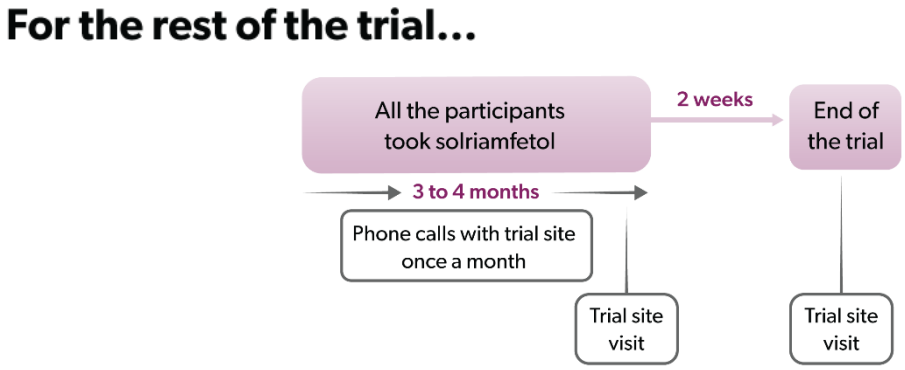


After about 6 months of treatment, some of the participants who were still in the trial took part in a 2-week treatment period that let researchers learn more about how solriamfetol affects excessive daytime sleepiness in people with OSA or narcolepsy. During these 2 weeks, about half of these participants kept taking solriamfetol, while the other half switched over to taking a placebo. The researchers used a computer program to choose the treatment each participant would take.



During this part of the trial, none of the participants, doctors, or other staff knew which participants kept taking solriamfetol and which switched over to a placebo. Some trials are done this way because knowing what treatment each participant is taking can affect the results. When the trial ended, the sponsor found out which treatment each participant took during these 2 weeks so they could report the results.

After these 2 weeks, the participants who had switched over to a placebo went back to taking the dose of solriamfetol that they were taking before they switched. All of the participants took solriamfetol for another 3 to 4 months until the end of the trial. Then they had 1 more trial site visit about 2 weeks after their last dose.



At trial site visits, the participants:

- Told the trial staff how they were feeling and what medications they were taking
- Completed questionnaires
- Gave blood and urine samples

The trial staff checked the participants' health at each visit.

What medical problems did the participants have during long-term use of solriamfetol?

This section is a summary of the medical problems the participants had during treatment. These medical problems are called **adverse events**. An adverse event is considered "serious" when it is life threatening, causes lasting problems, or requires hospital care.

A lot of research is needed to know whether a treatment causes a medical problem. So, when new drugs are being studied, researchers keep track of all of the medical problems that participants have during a trial.

The websites listed at the end of this summary may have more information about the medical problems that happened in this trial.

In this summary, adverse events are shown separately for:

- The part of the trial when all of the participants took solriamfetol, which was for about 10 to 11 months
- The 2-week period when some participants took solriamfetol and some participants took a placebo

How many participants had serious adverse events?

During the 10 to 11 months when all of the participants took solriamfetol:

- 26 out of 643 participants had at least 1 serious adverse event. This was 4% of the participants.

During the 2 weeks when some of the participants took solriamfetol and some of the participants took a placebo:

- 1 out of 140 participants taking solriamfetol had a serious adverse event. This was 0.7% of the participants taking solriamfetol.
- None of the 142 participants who switched over to taking a placebo had a serious adverse event.

What serious adverse events did the participants have?

During the 10 to 11 months when all of the participants took solriamfetol:

- There were 3 types of serious adverse events that happened in more than 1 participant. These are shown in the table below.
- There were other serious adverse events, but they happened in fewer participants.

Serious adverse events that happened to more than 1 participant during long-term solriamfetol use

Type of serious adverse event	**Solriamfetol** (Out of 643 participants)	What dose of solriamfetol did these participants take most often during the trial?
Alcohol poisoning	2 participants (0.3%)	1 participant took solriamfetol 150 milligrams 1 participant took solriamfetol 300 milligrams
A type of irregular heartbeat called atrial fibrillation	2 participants (0.3%)	Both participants took solriamfetol 300 milligrams
Dizziness	2 participants (0.3%)	Both participants took solriamfetol 300 milligrams

The trial doctors thought 1 of the serious adverse events of atrial fibrillation might have been related to treatment with solriamfetol. The trial doctors thought the other serious adverse events in the table above were not related to treatment with solriamfetol.

During the 2 weeks when some of the participants took solriamfetol and some of the participants took a placebo:

There was 1 serious adverse event during these 2 weeks

Type of serious adverse event	**Solriamfetol** (Out of 140 participants)	**Placebo** (Out of 142 participants)
Non-cardiac chest pain, which is chest pain that is not caused by a heart problem	1 participant (0.7%)	0 participants

The trial doctors thought that this serious adverse event was not related to treatment with solriamfetol.

Were there any deaths during the trial?

One out of 643 participants died during the part of the trial when all of the participants were taking solriamfetol. This was 0.7% of the participants.

This participant died from sepsis, which is a serious adverse event that results from complications of an infection. The trial doctors thought that this serious adverse event was not related to treatment with solriamfetol.

How many participants had any adverse events?

During the 10 to 11 months when all of the participants took solriamfetol:

- 478 out of 643 participants had at least 1 adverse event. This was 74.3% of the participants.
- 59 out of 643 participants stopped taking solriamfetol because of an adverse event. This was 9.2% of the participants.

During the 2 weeks when some of the participants took solriamfetol and some of the participants took a placebo:

- 22 out of 140 participants who took solriamfetol had at least 1 adverse event. This was 15.7% of these participants.
- 16 out of 142 participants who took a placebo had at least 1 adverse event. This was 11.3% of these participants.
- None of the participants who took solriamfetol stopped taking their trial treatment because of an adverse event during this 2-week period.
- 1 out of 142 participants who took a placebo stopped taking their trial treatment because of an adverse event. This was 0.7% of these participants.

What adverse events did the participants have?

During the 10 to 11 months when all of the participants took solriamfetol:

The table below shows the adverse events that happened in at least 5% of the participants during this part of the trial. There were other adverse events, but they happened in fewer participants.

The most common adverse events with long-term solriamfetol use

	Any dose of solriamfetol (Out of 643 participants)	**Solriamfetol 75 milligrams** (Out of 64 participants)	**Solriamfetol 150 milligrams** (Out of 207 participants)	**Solriamfetol 300 milligrams** (Out of 372 participants)
Headache	70 participants (10.9%)	16 participants (25.0%)	19 participants (9.2%)	35 participants (9.4%)
Nausea	57 participants (8.9%)	5 participants (7.8%)	31 participants (15.0%)	21 participants (5.6%)
Common cold	52 participants (8.1%)	5 participants (7.8%)	17 participants (8.2%)	30 participants (8.1%)
Trouble falling asleep or staying asleep	50 participants (7.8%)	13 participants (20.3%)	24 participants (11.6%)	13 participants (3.5%)
Dry mouth	47 participants (7.3%)	9 participants (14.1%)	15 participants (7.2%)	23 participants (6.2%)
Anxiety	45 participants (7.0%)	5 participants (7.8%)	28 participants (13.5%)	12 participants (3.2%)
Loss of appetite	32 participants (5.0%)	4 participants (6.3%)	13 participants (6.3%)	15 participants (4.0%)

During the 2 weeks when some of the participants took solriamfetol and some of the participants took a placebo:

The table below shows the adverse events that happened in more than 1 participant during this part of the trial. There were other adverse events, but they happened in fewer participants.

The most common adverse events during the 2-week period when some participants took solriamfetol and some participants took a placebo

	Solriamfetol (Out of 140 participants)	**Placebo** (Out of 142 participants)
Headache	2 participants (1.4%)	0 participants
High blood pressure	2 participants (1.4%)	0 participants
Trouble falling asleep	2 participants (1.4%)	1 participant (0.7%)
Common cold	2 participants (1.4%)	1 participant (0.7%)
Back pain	0 participants	2 participants (1.4%)
Cough	0 participants	2 participants (1.4%)
Fatigue	0 participants	2 participants (1.4%)

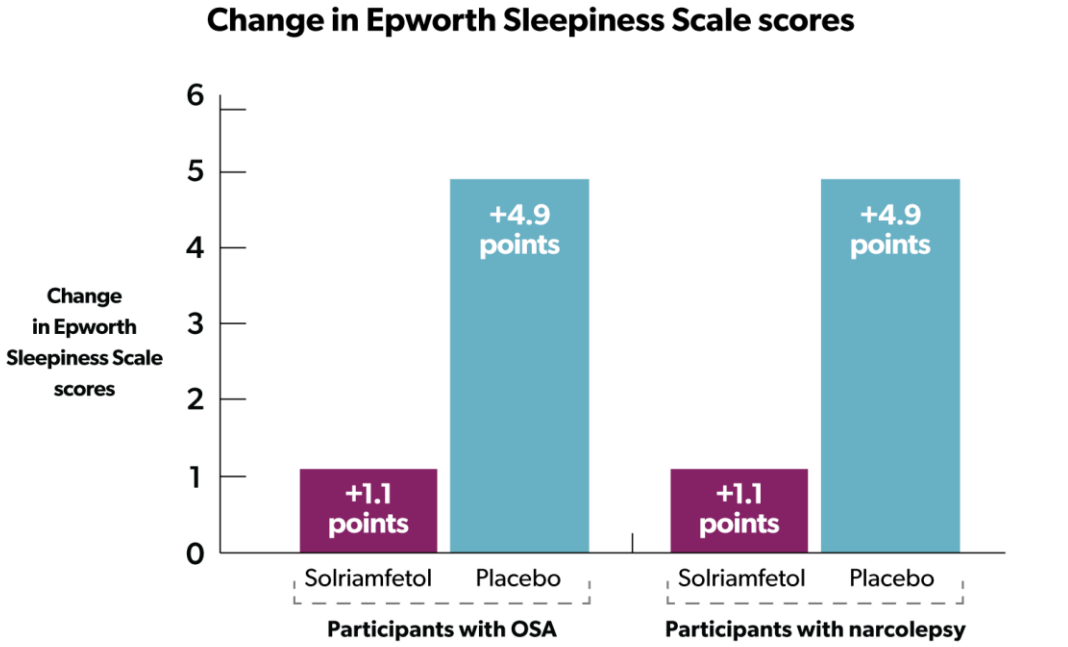
Did solriamfetol help the participants feel less sleepy during the day after 6 months of daily use?

To answer this question, the trial doctors looked at how the participants responded to a questionnaire called the **Epworth Sleepiness Scale**. This questionnaire asked the participants to rate how likely they were to fall asleep in different situations. Higher scores mean more daytime sleepiness.

The trial doctors looked at how Epworth Sleepiness Scale scores changed during the 2-week period when some participants kept taking solriamfetol each morning, while some switched over to taking a placebo.

From the beginning to the end of that 2-week period, the average score increased more for the participants who switched over to taking a placebo than for participants who kept taking solriamfetol. This was the case for both participants with OSA and participants with narcolepsy.

This means that the participants who took solriamfetol reported a smaller increase in daytime sleepiness than the participants who took a placebo.



An increase in Epworth Sleepiness Scale score means more daytime sleepiness.

These are results for the participants overall. Results for each participant may have been different and are not in this summary. You can find more information about this trial – including other questions the researchers wanted to answer – in the websites listed at the end of this summary.

Researchers look at the results of many trials to decide which treatments work best and are safest. Other trials could have different results.

How has this trial helped?

The results of this trial helped the researchers learn more about how solriamfetol works in people with excessive daytime sleepiness caused by OSA or narcolepsy. Clinical trials like this are important to help researchers understand which treatments work best and are safest for patients.

Researchers and health authorities look at the results of many trials to understand how a drug works. This summary only shows the main results from this trial. Other trials might provide different results. If you have questions about these results, please speak with the doctor or staff at your trial site, or talk to your doctor.

Clinical trials with solriamfetol are ongoing, and more trials are planned.

Where can I learn more about this trial?

You can find more information about this trial on the websites listed below. If a report of the results is available, it can also be found there.

- http://www.clinicaltrialsregister.eu – On this website, click "Home and Search". Then type **2014-005489-31** in the search box and click "Search".
- http://www.clinicaltrials.gov – On this website, type **NCT02348632** into one of the search boxes and click "Search".

Trial title: A Long-Term Safety and Maintenance of Efficacy Study of JZP-110 [(*R*)-2-Amino-3-Phenylpropylcarbamate Hydrochloride] in the Treatment of Excessive Sleepiness in Subjects with Narcolepsy or Obstructive Sleep Apnea

Protocol number: 14-005

You can find more information about solriamfetol here:

- https://www.accessdata.fda.gov/drugsatfda_docs/label/2019/211230s000lbl.pdf

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