Clinical Trial Results

Drug Studied: JZP-110, also known as solriamfetol

A trial to learn how solriamfetol worked and how safe it was in people with excessive daytime sleepiness caused by obstructive sleep apnea

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.

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 12 weeks, but the entire trial took about 1 year and 6 months to finish. The trial started in May 2015 and ended in November 2016.

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, is a chronic sleep disorder. 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 help manage OSA and improve nighttime breathing. One of these treatments is **continuous positive airway pressure, also called CPAP**. A CPAP machine gently blows air into a person's nose and mouth through a mask to help keep their airway open while they sleep.

Even with treatment, people with OSA often feel like they have not gotten a good night's sleep. One of the symptoms of OSA is feeling very sleepy during the day, a condition known as **excessive daytime sleepiness**.

Excessive daytime sleepiness can cause people with OSA to fall asleep when they are supposed to be awake. It can also make it difficult for them to do many of the things they need to do every day.

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.

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

- Did solriamfetol help the participants stay awake during the day?
- Did solriamfetol help the participants feel less sleepy during the day?
- What medical problems did the participants have during the trial?

Who took part in the trial?

To answer these questions, the researchers asked for the help of men and women with excessive daytime sleepiness caused by OSA.

There were 174 participants in this trial from 34 trial sites in the United States, Finland, Sweden, Germany, and France. There were 107 men and 67 women. Everyone in this trial was 24 to 74 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.

The participants in this trial took one of the following treatments every morning:

- Solriamfetol 75 milligrams
- Solriamfetol 150 milligrams
- Solriamfetol 300 milligrams
- 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 had 2 visits at the trial site.

At the first visit, the trial doctors made sure that everyone who joined the trial had OSA and excessive daytime sleepiness that could not be explained by other common causes, such as too little sleep at night, a work schedule that interfered with regular nighttime sleep, or a medical problem besides OSA. They also made sure the participants were using or had at least tried to use a treatment for OSA such as CPAP. They gave the participants a full check-up to make sure they were healthy enough to join the trial.

At the second visit, people who wanted to join the trial spent the night at the trial site to complete an **overnight sleep study.** During overnight sleep studies, the trial doctors measured each person's nighttime sleep and daytime sleepiness.

During treatment, the participants took their assigned treatment every morning for up to 6 weeks.

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.

At the end of these 2 weeks, 157 out of 174 participants moved on to the next part of the trial:

23 participants were taking solriamfetol 75 milligrams	**50 participants were taking solriamfetol 150 milligrams**	**84 participants were taking solriamfetol 300 milligrams**

For the next 2 weeks, all of the participants took the same dose of solriamfetol every morning. The dose they took was the dose they were taking at the end of the first 2 weeks.

Participants who had measurable improvement in their daytime sleepiness during the first 4 weeks of treatment could move on to the next part of the trial.

Of the 157 participants who started this part of the trial, 124 participants moved on to the next part of the trial.

For the last 2 weeks:

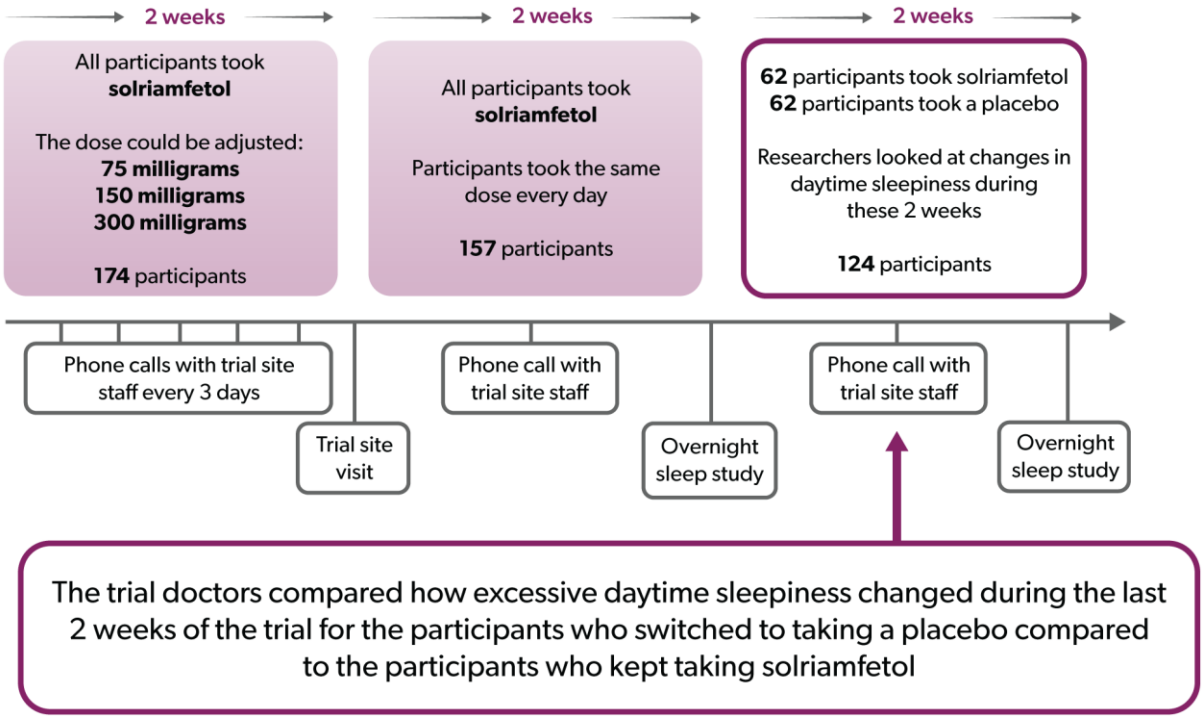
62 participants kept taking solriamfetol

9 participants took 75 milligrams
26 participants took 150 milligrams
27 participants took 300 milligrams

62 participants took a placebo

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. The researchers used a computer program to randomly choose whether a participant would keep taking solriamfetol or switch 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.

The figure below shows all 3 steps of treatment during the trial.



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.

At the end of the trial, the participants were invited to join another clinical trial of solriamfetol. If they decided not to join, they had 1 more trial site visit 2 weeks after the last dose of their trial treatment.

What were the results of the trial?

This is a summary of the overall results of the trial. 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.

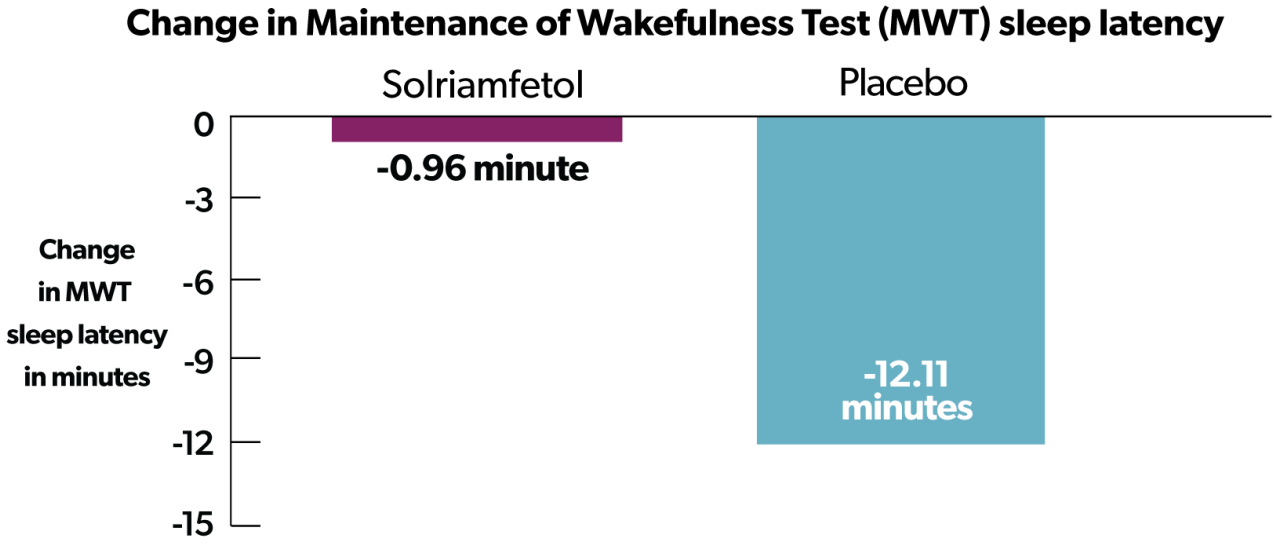
Researchers look at the results of many trials to decide which treatments work best and are safest. Other trials could have different results.

Did solriamfetol help the participants stay awake during the day?

To answer this question, the trial doctors looked at how long the participants were able to stay awake during the **Maintenance of Wakefulness Test (MWT)**, which measures a person's ability to stay awake during the day in a dark and quiet room. The amount of time a person can stay awake is called the **MWT sleep latency**.

On the day after overnight sleep study visits, the trial doctors measured the participants' MWT sleep latency from 1 to 9 hours after they took their assigned treatment in the morning. They looked at how MWT sleep latency changed during the 2-week period when some participants kept taking solriamfetol each morning, while others switched over to taking a placebo.

From the beginning to the end of that 2-week period, the average MWT sleep latency decreased less for the participants who kept taking solriamfetol than for the participants who switched over to taking a placebo. This means that, on average, the participants who took solriamfetol were able to stay awake longer than the participants who took a placebo.



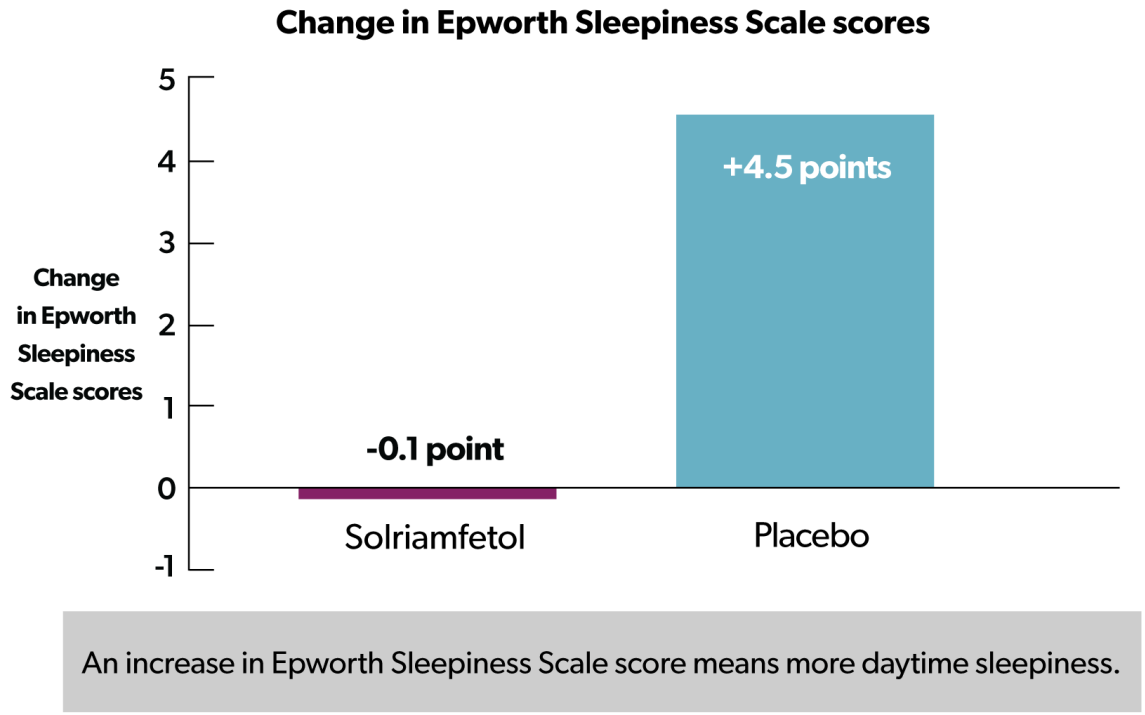
The average amount of time that participants could stay awake during the MWT dropped more for the participants who switched over to taking a placebo than for the participants who kept taking solriamfetol.

Did solriamfetol help the participants feel less sleepy during the day?

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 others switched over to taking a placebo.

From the beginning to the end of that 2-week period, the average score decreased by -0.1 point in the participants who kept taking solriamfetol. The average score increased by 4.5 points in the participants who switched over to taking a placebo. This means that, on average, daytime sleepiness did not increase for the participants who took solriamfetol but did increase for the participants who took a placebo.



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

What were the other results of the trial?

The participants also completed a questionnaire that asked them to rate how they thought their overall condition had changed during the 2-week period when some participants kept taking solriamfetol, while other participants switched over to taking a placebo. The researchers looked at questionnaire responses from 122 of the 124 participants who took part in this part of the trial.

More participants who switched over to taking a placebo each morning said their condition had worsened during these 2 weeks compared with the participants who kept taking solriamfetol:

- 12 of 60 participants (20%) who kept taking solriamfetol reported worsening
- 31 of 62 participants (50%) who switched over to taking a placebo reported worsening

What medical problems did the participants have during the trial?

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.

During this trial, the treatment a participant took could change over time. This is because the dose of solriamfetol could be adjusted during the first 2 weeks, and because some participants switched over to taking a placebo during the last 2 weeks.

- All 174 participants took solriamfetol 75 milligrams at some point during the trial. The average amount of time that participants took this dose was 8 days.
- 162 of 174 participants (93%) took solriamfetol 150 milligrams at some point during the trial. The average amount of time that these participants took this dose was 12 days.
- 132 of 174 participants (76%) took solriamfetol 300 milligrams at some point during the trial. The average amount of time that these participants took this dose was 20 days.
- 62 of 174 participants (36%) took a placebo during the last 2 weeks of the trial.

When a participant had an adverse event, the trial doctors recorded whether the participant was taking solriamfetol or a placebo when the adverse event happened.

If they were taking solriamfetol, the doctors recorded the dose they were taking when the adverse event happened.

How many participants had serious adverse events?

None of the participants in this trial had a serious adverse event.

None of the participants died during the trial.

How many participants had any adverse events?

The table below shows how many participants had an adverse event while taking each dose of solriamfetol or a placebo. It also shows how many participants stopped taking their trial treatment because of an adverse event.

	Solriamfetol 75 milligrams (Out of 174 participants)	**Solriamfetol 150 milligrams** (Out of 162 participants)	**Solriamfetol 300 milligrams** (Out of 132 participants)	**Placebo** (Out of 62 participants)
How many participants had at least 1 adverse event while taking this treatment?				
	33 participants (19.0%)	45 participants (27.8%)	56 participants (42.4%)	6 participants (9.7%)
How many participants stopped taking this treatment because of an adverse event?				
	1 participant (0.6%)	4 participants (2.5%)	3 participants (2.3%)	0 participants

What adverse events did the participants have?

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

The most common adverse events in this trial

	Solriamfetol 75 milligrams (Out of 174 participants)	**Solriamfetol 150 milligrams** (Out of 162 participants)	**Solriamfetol 300 milligrams** (Out of 132 participants)	**Placebo** (Out of 62 participants)
Headache	7 participants (4.0%)	7 participants (4.3%)	9 participants (6.8%)	0 participants
Dizziness	3 participants (1.7%)	4 participants (2.5%)	7 participants (5.3%)	0 participants
Dry mouth	1 participant (0.6%)	4 participants (2.5%)	8 participants (6.1%)	0 participants
Nausea	2 participants (1.1%)	5 participants (3.1%)	7 participants (5.3%)	0 participants
Trouble falling asleep or staying asleep	2 participants (1.1%)	5 participants (3.1%)	4 participants (3.0%)	0 participants
A fast, strong, or irregular heartbeat	3 participants (1.7%)	1 participant (0.6%)	5 participants (3.8%)	0 participants

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. 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 **2014-005515-16** in the search box and click "Search".
- http://www.clinicaltrials.gov – On this website, type **NCT02348619** into one of the search boxes and click "Search".

Trial title: A Six-Week, Double-Blind, Placebo-Controlled, Randomized-Withdrawal, Multicenter Study of the Safety and Efficacy of JZP-110 [(*R*)-2-amino-3-phenylpropylcarbamate hydrochloride] in the Treatment of Excessive Sleepiness in Subjects with Obstructive Sleep Apnea (OSA)

Protocol number: 14-004

You can find more information about solriamfetol here:

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

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Thank you!

Jazz Pharmaceuticals would like to thank the people who participated in this clinical trial. Clinical trial participants help researchers and health authorities find answers to important health questions and discover new treatments.

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