Delta sleep-inducing peptide (DSIP) is a regulatory nonapeptide that naturally exists in animals and humans.\(^1,2\) It was originally isolated from rabbit brain in the late 1970s.\(^1,2\) It is naturally produced, where it then works on the sleep center in the hypothalamus with subcutaneous injections or when given nasally. DSIP can freely cross the blood-brain barrier.\(^1-4\) DSIP is well known for its effects on sleep, specifically its ability to induce delta-wave deep sleep and regulate circadian rhythm.\(^1\) It is considered to be the principal endogenous sleep factor, making it relevant in the treatment of clinical insomnia and other sleep disorders.\(^1,5-7\) DSIP also has substantial neuroprotective effects, allowing it to be used as an anticonvulsant, as well as for neuroinflammation, pain, and stress reduction.\(^1,8-10\) DSIP also has a range of other positive effects, including antihypertensive, anti-cancer, and antioxidant properties.\(^11-13\) It additionally plays a role in endocrine and body temperature regulation.\(^14-16,19\) DSIP is already in use clinically and has been used to manage pain and alcohol and opioid withdrawal.\(^10,17,21\)

### Clinical Effects of DSIP

- Regulates circadian rhythm and improves sleep\(^1,5-7\)
- Plays a beneficial role in neuroendocrine, cardiovascular, and respiratory regulation\(^11-13,19,20\)
- Attenuates pain in sufferers of migraines, headaches and tinnitus\(^10\)
- Regulates body temperature, mediating conditions such as hyperthermia\(^14-16\)
- Reduces psychological and physiological stress\(^1,18\)
- Acts as an anticonvulsant\(^8\)
- Mediates symptoms of alcohol and opioid withdrawal\(^17,21\)
- Can have anti-cancer effects\(^12\)
- Reduces symptoms and improves quality of life in people with diabetes\(^22\)
- Reduces neuroinflammation\(^9\)
- Reduces chronic pain

**Side effects:** DSIP has an excellent safety profile, with no reported toxicity. Minimal side effects, such as transient headache, nausea, and vertigo have been reported.\(^1\)

**Dosing protocol:** DSIP is typically available as a lyophilized powder. It should be reconstituted with 5cc bacteriostatic water prior to use.

DSIP can be administered intranasally or injected. It is typically given at bedtime to improve deep sleep. It does not work like a sleeping pill, which cause sleepiness and grogginess. Rather it supports deeper, more restful sleep. It increases resistance to stress. It can be taken throughout the day to help handle physiological and physical stress or pain.

**Typical nasal instructions and dosing:** For nasal administration, insert the needle free access vial adaptor straight through the vial stopper and leave in until vial is empty. Push and twist the syringe into the adaptor and invert the vial. Withdraw from 0.1 to 0.2 and untwist the syringe. Next push the intranasal device on the top of the syringe with the wide part of the cone onto the syringe. Place the intranasal device into your nostril and push syringe and sniff in DSIP.

**Typical injected dosing:** Insert needle into stopper and turn the vial upside down. Draw to 0.1 to 0.2 into the syringe and push syringe until there is no air in the syringe. Pull out of vial and insert needle into belly and inject.