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Hebrew University researchers show how morphine can be given more effectively

Jerusalem, April 27, 2009 – Researchers at the Hebrew University of Jerusalem have found a way to maintain the pain-killing qualities of morphine over an extended period of time, thus providing a solution for the problem of having to administer increasing dosages of the drug in order to retain its effectiveness.

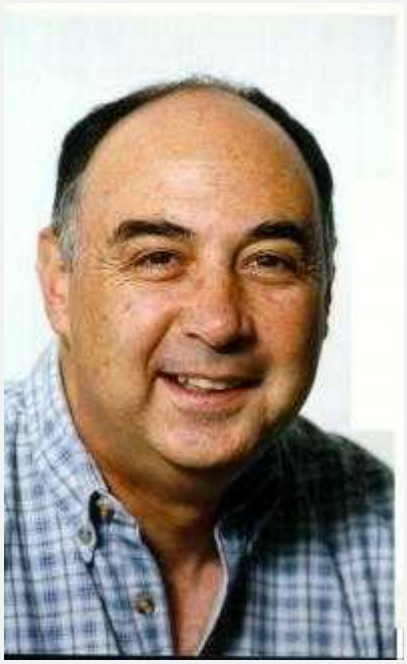

IMAGE: Yehuda Shavit is a professor at the Hebrew University of Jerusalem.

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One of the limitations in long-term use of morphine for pain relief is the rapid development of tolerance. The effectiveness of morphine declines quickly, and one must increase the dosage in order to preserve effective pain relief. However, the increased dosage also increases negative side effects.

The Hebrew University researchers, Prof. Yehuda Shavit and his graduate student Gilly Wolf of the Psychology Department, found that administration of morphine causes a substance called interleukin-1 to be released.

Under normal circumstances, interleukin-1 plays an important role in survival. In case of tissue damage, nerve injury, or inflammatory reaction, inteleukin-1 is released and sets off a process which increases the sensitivity to pain in the injured area. This pain serves as a warning signal, telling the body that there is a problem that should be attended to. In case of chronic pain, morphine is still the drug of choice for pain relief.

However, since prolonged administration of morphine raises the level of interleukin-1, thereby enhancing pain sensitivity, the effectiveness of morphine as a pain killer is steadily reduced, requiring greater dosages with accompanying negative side effects.

The Hebrew University researchers were able to show in animal experiments that administering morphine together with another drug that blocks the activity of interleukin-1 provides more effective pain relief over the long term without having to increase the dosage.

Shavit, who is the Leon and Clara Sznajderman Professor of Psychology at the Hebrew University and whose specialty is psychoneuroimmunology, expressed hope that this research will make it possible for clinicians to make use of morphine, together with substances that block interluekin-1, in order to bring about better pain relief with lower dosages and with minimized side effects. The research will be presented at a conference on pain research on May 3 on the Mount Scopus campus of the university. The conference is open to journalists and to people in the field.

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