

# Surgical Pleth Index (SPI) Publications Reference List 2020

SSI, or Surgical Stress Index, was the first working name for the measurement. Therefore, this name may come up in some of the early research references.

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## PEER-REVIEWED JOURNAL ARTICLES

- Funcke, S., Pinnschmidt, H. O., Wesseler, S., Brinkmann, C., Beyer, B., Jazbutyte, V., ... Nitzschke, R. (2020). Guiding Opioid Administration by 3 Different Analgesia Nociception Monitoring Indices During General Anesthesia Alters Intraoperative Sufentanil Consumption and Stress Hormone Release: A Randomized Controlled Pilot Study. *Anesthesia and Analgesia*, 130(5), 1264–1273.
- Hung, K. C., Chen, J. Y., Chu, C. C., & Sun, C. K. (2020). Perioperative Surgical Pleth Index as a Stress Indicator for the Prevention of Perioperative Euglycemic Diabetic Ketoacidosis. *Journal of Clinical Monitoring and Computing*, (0123456789), 7–8.
- Lee, J. H., Choi, B. M., Jung, Y. R., Lee, Y. H., Bang, J. Y., & Noh, G. J. (2020). Evaluation of Surgical Pleth Index and Analgesia Nociception Index as surrogate pain measures in conscious postoperative patients: an observational study. *Journal of Clinical Monitoring and Computing*, 34(5), 1087–1093.
- Meijer, F. S., Niesters, M., van Velzen, M., Martini, C. H., Olofsen, E., Edry, R., ... Boon, M. (2020). Does nociception monitor-guided anesthesia affect opioid consumption? A systematic review of randomized controlled trials. *Journal of Clinical Monitoring and Computing*, 34(4), 629–641.
- Park, M. H., Kim, B. J., & Kim, G. S. (2020). Prediction of postoperative pain and analgesic requirements using surgical pleth index: a observational study. *Journal of Clinical Monitoring and Computing*, 34(3), 583–587.
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- Mustola, S., & Toivonen, J. (2010). Effect-site concentration of remifentanil attenuating surgical stress index responses to intubation of the trachea. *Anaesthesia*, 65(6), 581–585.
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- Wennervirta, J. E., Hynynen, M. J., Koivusalo, A.-M., Uutela, K., Huiku, M., & Vakkuri, A. P. (2008). Surgical stress index as a measure of nociception/antinociception balance during general anesthesia. *Acta Anaesthesiologica Scandinavica*, 52(8), 1038–1045.
- Ahonen, J., Jokela, R., Uutela, K., & Huiku, M. (2007). Surgical stress index reflects surgical stress in gynaecological laparoscopic day-case surgery. *British Journal of Anaesthesia*, 98(4), 456–461.
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## PEER-REVIEWED JOURNAL ARTICLES LISTED BY CATEGORY

### Betablockers

Ahonen, J., Jokela, R., Uutela, K., & Huiku, M. (2007). Surgical stress index reflects surgical stress in gynaecological laparoscopic day-case surgery. *British Journal of Anaesthesia*, 98(4), 456–461.

### Desflurane

Dostalova, V., Schreiberova, J., Bartos, M., Kukralova, L., & Dostal, P. (2019). Surgical pleth index and analgesia nociception index for intraoperative analgesia in patients undergoing neurosurgical spinal procedures: A comparative randomized study. *Minerva Anesthesiologica*, 85(12), 1265–1272.

Ryu, K. H., Kim, J. A., Ko, D. C., Lee, S. H., & Choi, W. J. (2018). Desflurane reduces intraoperative remifentanyl requirements more than sevoflurane: comparison using surgical pleth index-guided analgesia. *British Journal of Anaesthesia*, 121(5), 1115–1122.

Ryu, K.-H., Kim, H.-S., Kim, Y.-H., Song, K., Lim, T.-Y., & Choi, W.-J. (2018). Does Equi-Minimum Alveolar Concentration Value Ensure Equivalent Analgesic or Hypnotic Potency? *Anesthesiology*, 128(6), 1092–1098.

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Won, Y. J., Lim, B. G., Yeo, G. E., Lee, M. K., Lee, D. K., Kim, H., ... Kong, M. H. (2017). The effect of nicardipine on the surgical pleth index during thyroidectomy under general anesthesia: A prospective double-blind randomized controlled trial. *Medicine (United States)*, 96(6), 1–6.

Wennervirta, J. E., Hynynen, M. J., Koivusalo, A.-M., Uutela, K., Huiku, M., & Vakkuri, A. P. (2008). Surgical stress index as a measure of nociception/antinociception balance during general anesthesia. *Acta Anaesthesiologica Scandinavica*, 52(8), 1038–1045.

### Isoflurane

Park, M. H., Kim, B. J., & Kim, G. S. (2020). Prediction of postoperative pain and analgesic requirements using surgical pleth index: a observational study. *Journal of Clinical Monitoring and Computing*, 34(3), 583–587.

Mustola, S., Parkkari, T., Uutela, K., Huiku, M., Kymäläinen, M., & Toivonen, J. (2010). Performance of Surgical Stress Index during Sevoflurane-Fentanyl and Isoflurane-Fentanyl Anesthesia. *Anesthesiology Research and Practice*, 1–5.

### Outcome

Funcke, S., Pinnschmidt, H. O., Wessler, S., Brinkmann, C., Beyer, B., Jazbutyte, V., ... Nitzschke, R. (2020). Guiding Opioid Administration by 3 Different Analgesia Nociception Monitoring Indices During General Anesthesia Alters Intraoperative Sufentanyl Consumption and Stress Hormone Release: A Randomized Controlled Pilot Study. *Anesthesia and Analgesia*, 130(5), 1264–1273.

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Won, Y. J., Lim, B. G., Lee, S. H., Park, S., Kim, H., Lee, I. O., & Kong, M. H. (2016). Comparison of relative oxycodone consumption in surgical pleth index-guided analgesia versus conventional analgesia during sevoflurane anesthesia A randomized controlled trial. *Medicine (United States)*, 95(35), 1–6.

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Bergmann, I., Göhner, A., Crozier, T. A., Hesjedal, B., Wiese, C. H., Popov, A. F., ... Hinz, J. M. (2013). Surgical pleth index-guided remifentanyl administration reduces remifentanyl and propofol consumption and shortens recovery times in outpatient anaesthesia. *British Journal of Anaesthesia*, 110(4), 622–628.

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## Pediatrics

Ledowski, T., Sommerfield, D., Slevin, L., Conrad, J., & Von Ungern-Sternberg, B. S. (2017). Surgical pleth index: Prediction of postoperative pain in children? *British Journal of Anaesthesia*, 119(5), 979–983.

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Kallio, H., Lindberg, L. I., Majander, A. S., Uutela, K. H., Niskanen, M. L., & Paloheimo, M. P. J. (2008). Measurement of surgical stress in anaesthetized children. *British Journal of Anaesthesia*, 101(3), 383–389.

## Postoperative pain

Lee, J. H., Choi, B. M., Jung, Y. R., Lee, Y. H., Bang, J. Y., & Noh, G. J. (2020). Evaluation of Surgical Pleth Index and Analgesia Nociception Index as surrogate pain measures in conscious postoperative patients: an observational study. *Journal of Clinical Monitoring and Computing*, 34(5), 1087–1093.

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Gruenewald, M., & Ilies, C. (2013). Monitoring the nociception-anti-nociception balance. *Best Practice and Research: Clinical Anaesthesiology*, 27(2), 235–247.

Ledowski, T., Ang, B., Schmarbeck, T., & Rhodes, J. (2009). Monitoring of sympathetic tone to assess postoperative pain: skin conductance vs surgical stress index. *Anaesthesia*, 64(7), 727–731.

## Posture

Colombo, R., Marchi, A., Borghi, B., Fossali, T., Tobaldini, E., Guzzetti, S., & Raimondi, F. (2015). Influence of gravitational sympathetic stimulation on the surgical plethysmographic index. *Physiological Research*, 64(2), 183–189.

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## Propofol

Defresne, A., Barvais, L., Clement, F., & Bonhomme, V. (2018). Standardised noxious stimulation-guided individual adjustment of remifentanyl target-controlled infusion to prevent haemodynamic responses to laryngoscopy and surgical incision: A randomised controlled trial. *European Journal of Anaesthesiology*, 35(3), 173–183.

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