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<b>(potentiële) belangenverstremgeling</b>	<b>Geen</b>
Voor bijeenkomst mogelijk relevante relaties met bedrijven	
•Sponsoring of onderzoeksgeld •Honorarium of andere (financiële) vergoeding •Aandeelhouder •Andere relatie	Geen Geen Geen Geen

# Locoregionale anesthesie

Op de spoedeisende hulp

Joram Stollman

11-11-2015

AIOS SEH Radboudumc

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# Inhoud

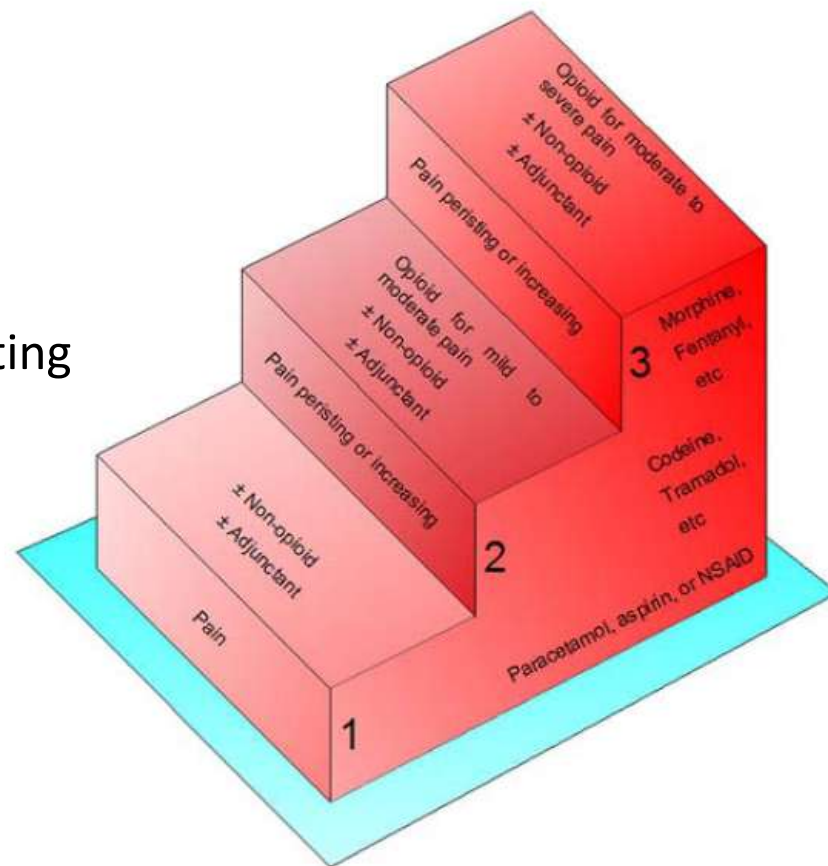
- Introductie
- DUCPEP
- Doelen
- Risico's
- Onderzoek
- Ervaring
- Eerste resultaten
- Conclusie



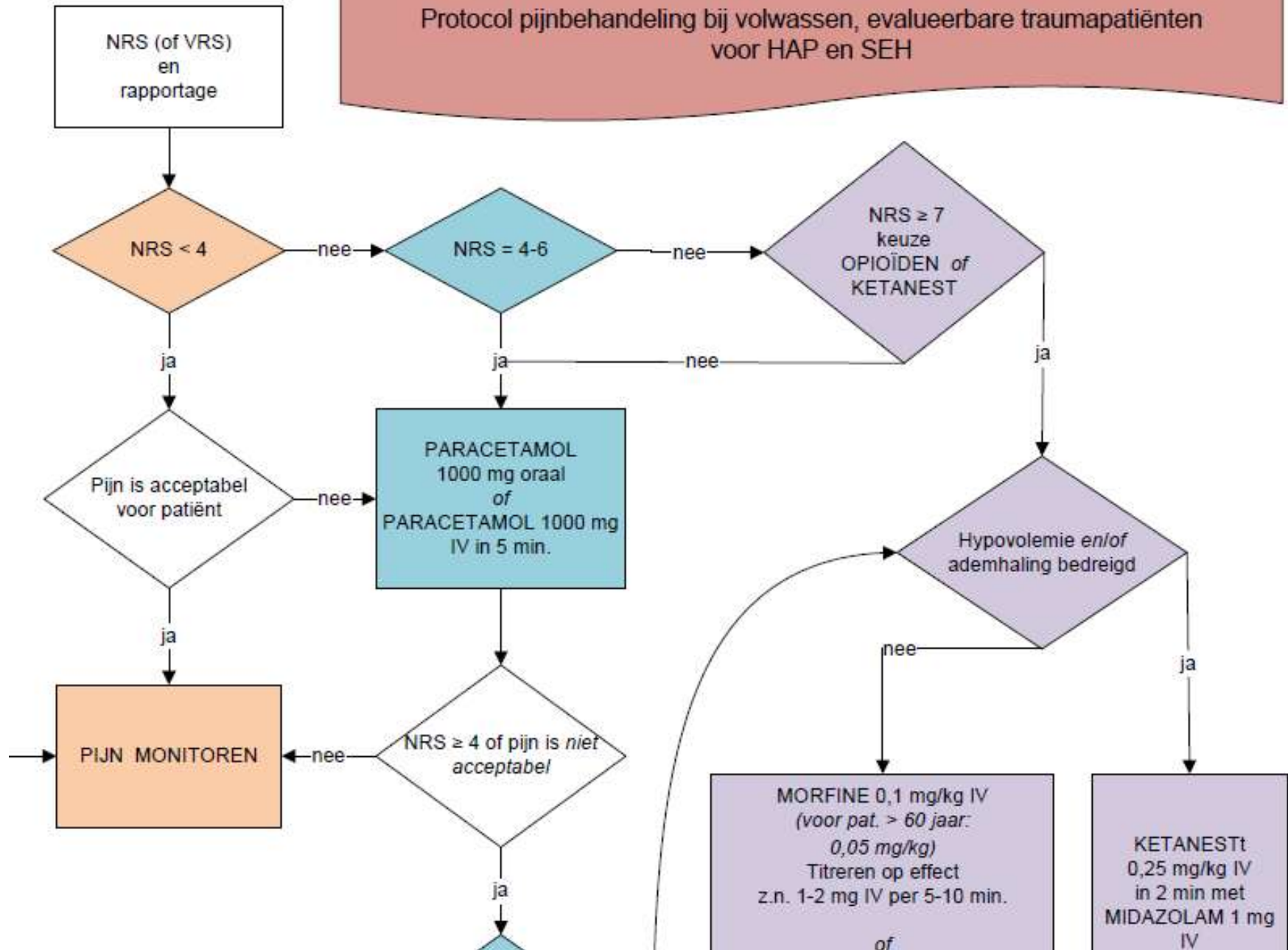
# Introductie

- Pijnbehandeling op de SEH
- Huidige pijnladder
- Toekomst van pijnstilling in acute setting
  - Locoregionale anesthesie
  - PSA
  - Esketamine
  - Metamizol

Figuur 3. WHO-analgetische ladder



Protocol pijnbehandeling bij volwassen, evalueerbare traumapatiënten voor HAP en SEH



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## Regional anesthesia in the ED

Trauma patients represent a significant proportion of current surgical volume and of patients being cared for in ICUs. Estimates suggest that this proportion will increase [Lopez et al., 2006]. These patients present many challenges and require extreme vigilance on the part of the health care team. An in-depth understanding of anatomy, physiology, and pharmacology is important when dealing with the trauma patient. Flexibility on the part of the physician to respond to the myriad challenges by adapting to different approaches and modalities is key. Clearly, RA can safely decrease suffering and improve outcomes in these patients when applied judiciously.

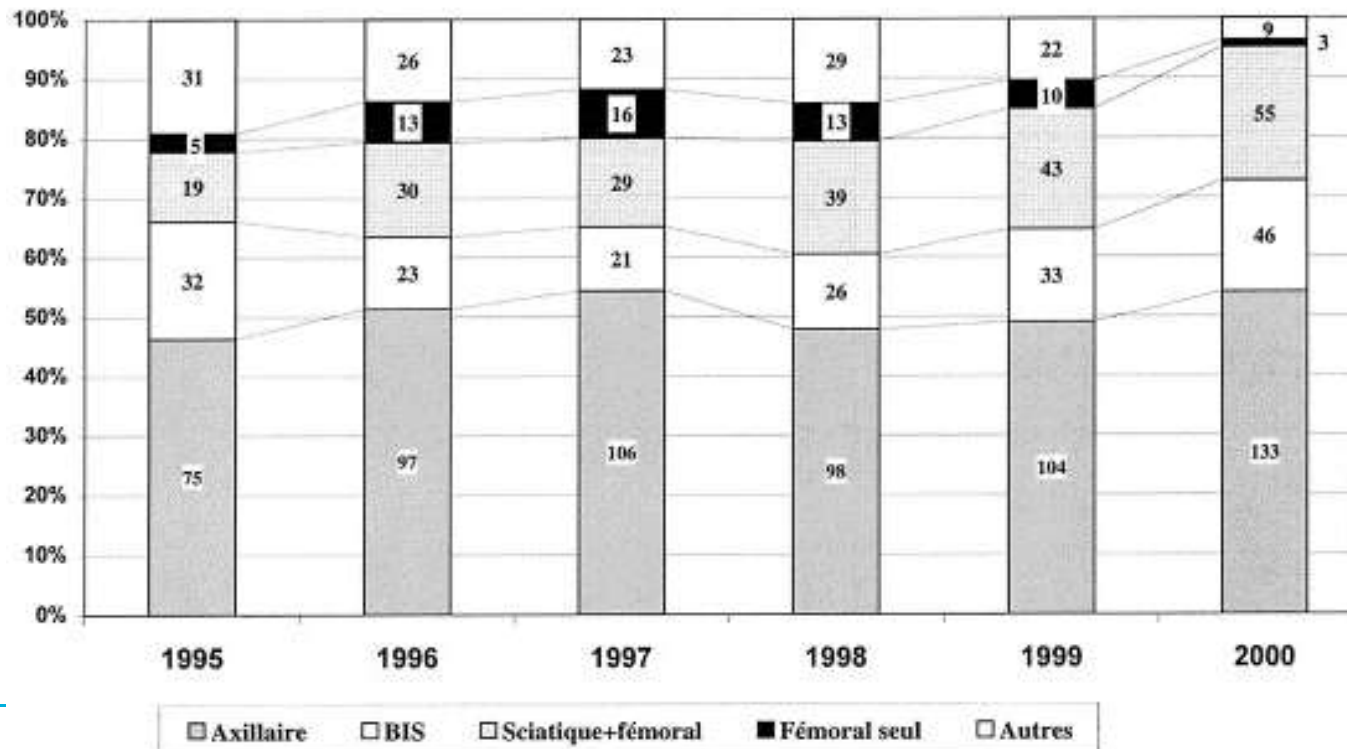
Pain Management – Current issues and Opinions.  
Racz (ed) ISBN: 978-953-307-813-7

# Locoregional anesthesia in the ED

## Évaluation de l'utilisation de l'anesthésie locorégionale dans un service d'urgence

R. Fuzier\*, B. Tissot, V. Mercier-Fuzier, C. Barbero, D. Caussade, F. Mengelle, E. Villacèque, C. Virenque, K. Samii, J.L. Ducassé

Ann Fr Anesth Réanim 2002 ; 21 : 193-7



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# DUCEP

- Dutch Ultrasound Guided Regional Anesthesia basic Course for Emergency Physicians
- Doelgroep
  - SEH artsen
  - AIOS SEH



DUCEP



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# DUCEP

- Introductie in echogeleide regionaalanesthesie
- Anatomie perifere zenuwen
- Theorie van echografie
- Herkennen echo-anatomie
- Hands-on oefenen (hand-oogcoördinatie)

Klaar voor de praktijk echter  
... grenzen bewaken!



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# Safety first!

- Keuze welke blocks wel en welke niet
- Vanaf de elleboog en vanaf de knie

## N Femoralis

- FIC-block
- Echogeleide n. femoralis blokkade

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# ‘Veilige’ zenuwen?

- Perifere zenuwen bovenste extremiteit
  - n. medianus
  - n. ulnaris
  - n. radialis
- Perifere zenuwen onderste extremiteit
  - n. tibialis
  - n. peroneus sup/prof
  - n. saphenus
  - n. suralis
- Localisaties uitvoeren blokkades

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# N femoralis block

- Veilig?
- Indicaties
  - Collumfracturen
  - Femurschachtfracturen
  - Patella fracturen/luxaties



## **Focus On: Ultrasound-Guided Femoral Nerve Block**

‘Ultrasound-guided femoral nerve block is an ideal procedure for the emergency physician to incorporate into clinical practice.’

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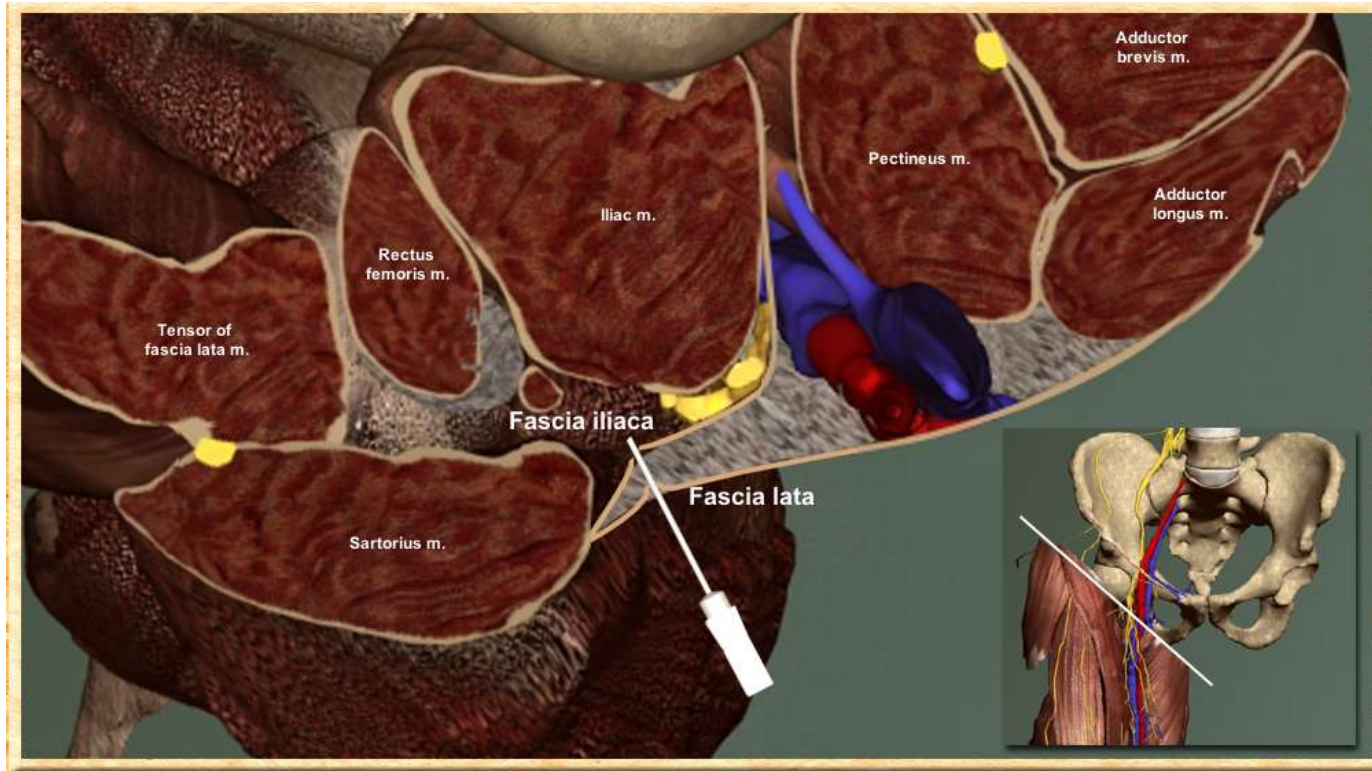
# Anesthesia

sensory loss after single injection femoral nerve block with 20 ml lido 1.5%



Jochum, Anaesthesia 2005;60:974-77

## Techniek fascia iliaca compartment block



3-in-1 block mythe: n. femoralis, n. cutaneus femoris lateralis, en n. obturatorius

# Echografische landmarks

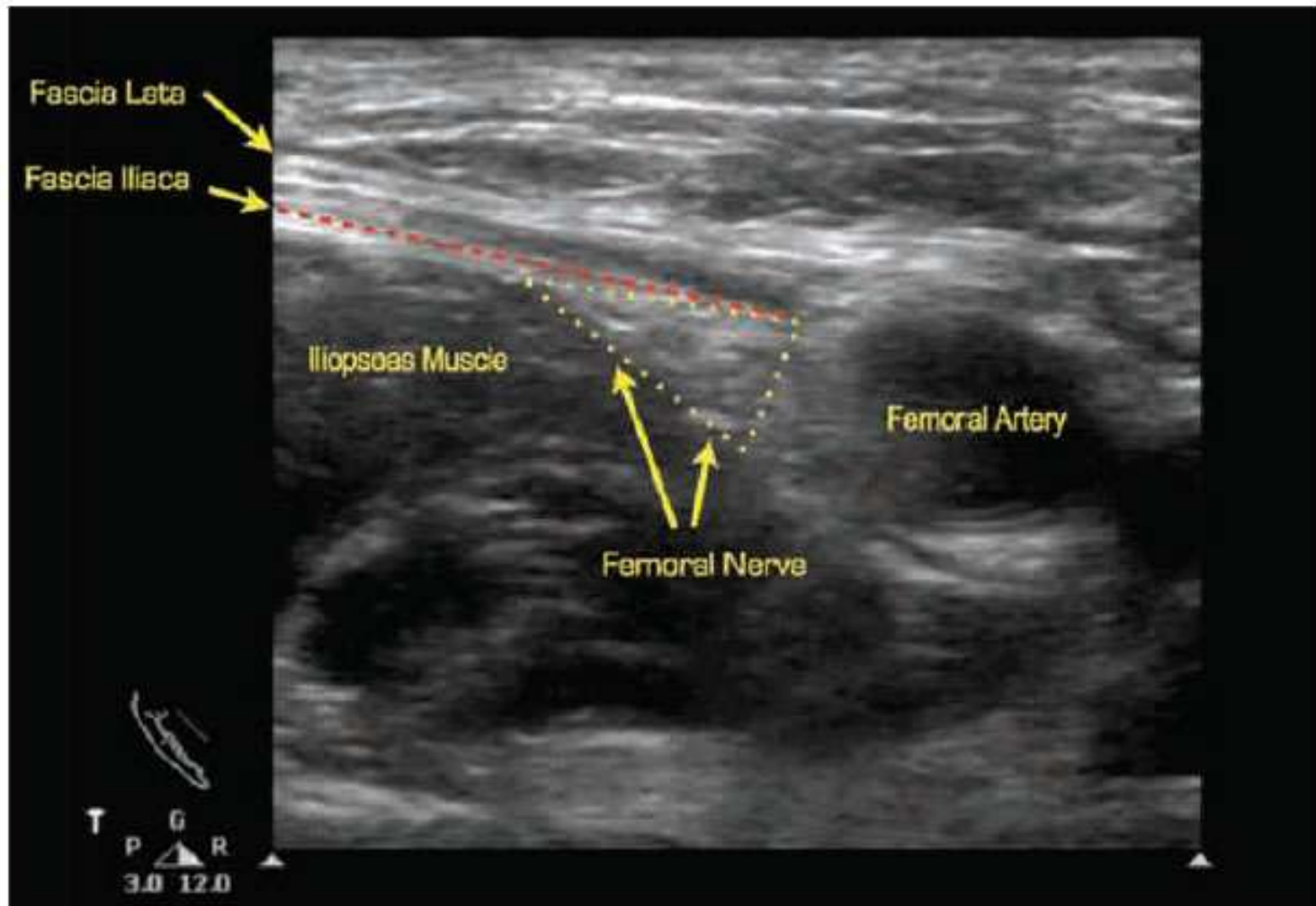
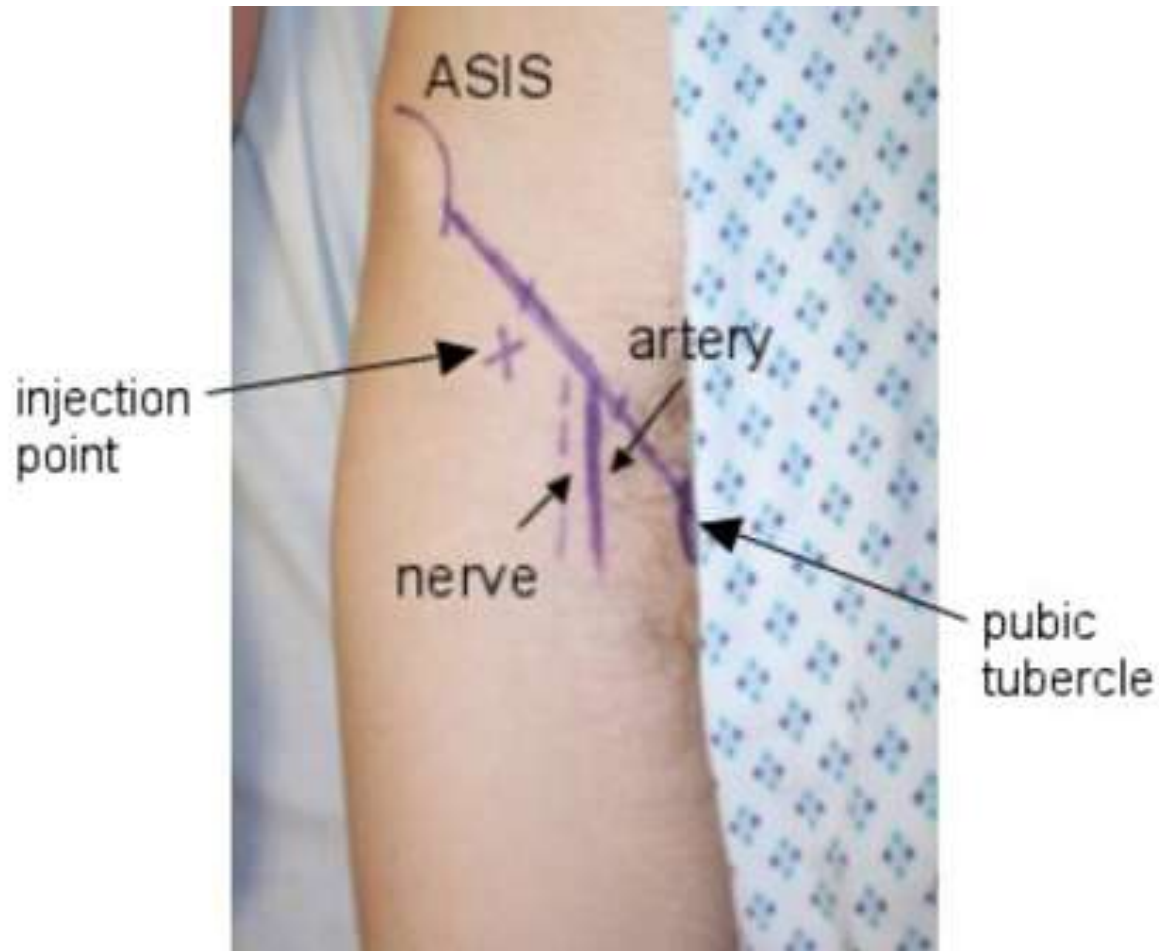


Image 3. The femoral nerve will appear as a triangular or oval honeycomb structure 3-10 mm in diameter, covered anteriorly by hyperechoic fascia iliaca.

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# Anatomische landmarks





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# Doelen

- Adequate doelmatige pijnstilling
- Terugdringen opiaatgebruik met diens bijwerkingen
- Bij ouderen terugdringen delier bij pijn?
- Sneller mobiliseren

# Gevaren?

## Kensley Kirby, 5-Year-Old Atlanta Girl, Dies From Lethal Dose Of Local Anesthetic



First Posted: 08/02/11 11:11 AM ET | Updated: 10/02/11 06:12 AM ET

React > [Amazing](#) [Inspiring](#) [Funny](#) [Scary](#) [Hot](#) [Crazy](#) [Important](#) [Weird](#)

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A 5-year-old Atlanta girl, [Kensley Kirby](#), was taken to a local clinic in June after falling and breaking her arm, and shockingly died from a lethal dose of a local anesthetic she was given.

The Atlanta coroner confirmed this week that the girl's death was caused by a lethal dose of [lidocaine](#), a common local anesthetic used for minor surgeries.

The tragedy begs the question: How common is this? Should patients be worried?

"Dying from a local anesthesia is extremely rare," Dr. Elliot Krane, professor of pediatrics and anesthesia

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# Gevaren

- Local anesthetic systemic toxicity (LAST)
- Wat te doen bij LAST
  - Intralipid (lipidrescue®)
  - Opgenomen in SOP

## BOX 1 *Manifestations of Systemic Toxicity*

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### Minor (Associated With Low Plasma Levels)

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- Perioral numbness
- Facial tingling
- Restlessness
- Tinnitus
- Metallic taste
- Vertigo
- Slurred speech

### Major (Associated With High Plasma Levels)

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- Sudden loss of consciousness
- Tonic-clonic seizures
- Cardiovascular collapse
- Cardiac arrest

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# Risico's

- Missen van compartmentsyndroom?
  - Nooit significant risico aangetoond in studies
- Reëel risico bij beoogde patientpopulatie op SEH?

*Review Article*

## **Regional Anesthesia in Trauma Medicine**

**Janice J. Wu, Loreto Lollo, and Andreas Grabinsky**

domyolysis, and cardiac arrhythmias. Increased risk categories of patients include those with tibial plateau fractures, crush injuries, and prolonged extrication [15]. Femoral neck fractures and ankle fractures are less frequently associated with this complication of orthopedic injury. Pain from

patient had complete pain relief from a peripheral nerve block and developed severe pain on the second postoperative day, despite effective nerve block and oral opioid analgesia. ~~Compartment syndrome was diagnosed and treated. The authors came to the conclusion that compartment syndrome can be diagnosed in the presence of effective regional anesthesia and that clinical evaluation and a high index of~~

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# Eerste ervaring

- Gestart onder supervisie van anesthesiologen
- Blokkensein anesthesie gedurende kantooruren
- Opgenomen in collum care ketenzorg
  - Heelkunde, orthopedie, geriatrie on board
- Pitfalls
  - Kost tijd?
  - Motivatie
  - Werkt het block bij iedereen?

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# Onderzoek op SEH

- Nervus femoralis blokkade bij volwassenen met bewezen collumfractuur

Primaire uitkomstmaat:

- Effectiviteit op pijnscores

Secundaire uitkomsten:

- Gemak van zetten block
- Patienttevredenheid

Toekomst

- Nervus medianus/radialis/ulnaris blokkade bij bewezen polsfracturen

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# Werkwijze

- Standard operating procedure op Qportaal
- Inclusieformulier DUCPEP
- Lokaal anestheticum van eerste keus
  - Ropivacaine 0,75%
- Volledig steriel werken
  - Echo probe cover en steriele gel
  - Steriel veld
  - Steriele jas + handschoenen

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# Eerste resultaten

- Op de SEH 15 patiënten met collumfractuur een n femoralisblock ontvangen
- Daling pijnscores geobserveerd
  - 1 tot 8 punten daling
- Patiënttevredenheid groot
- Patiënten zouden hetzelfde blok aanraden en in toekomst opnieuw willen



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# Conclusie

- Still a long way to go!
- Veelbelovend voor pijnbestrijding op SEH
- Onderzoek ter ondersteuning en bevestiging nodig

