

# Excited Delirium: Deadly for Patients Dangerous for Providers

Sean Kivlehan  
September 2017



(example)

- [https://www.youtube.com/watch?v=Ai2bVK\\_BGHs](https://www.youtube.com/watch?v=Ai2bVK_BGHs)

Definition

Pathophysiology

Recognition

Complications

Differential

Treatment



# What is ExDS?

**Delirium**: acute and temporary change in cognition and mental status

**Excited**: uncontrollable and violent behavior

**Syndrome**: a cluster of signs and symptoms commonly seen together and thought to have the same underlying cause

*This wasn't in my textbook...*

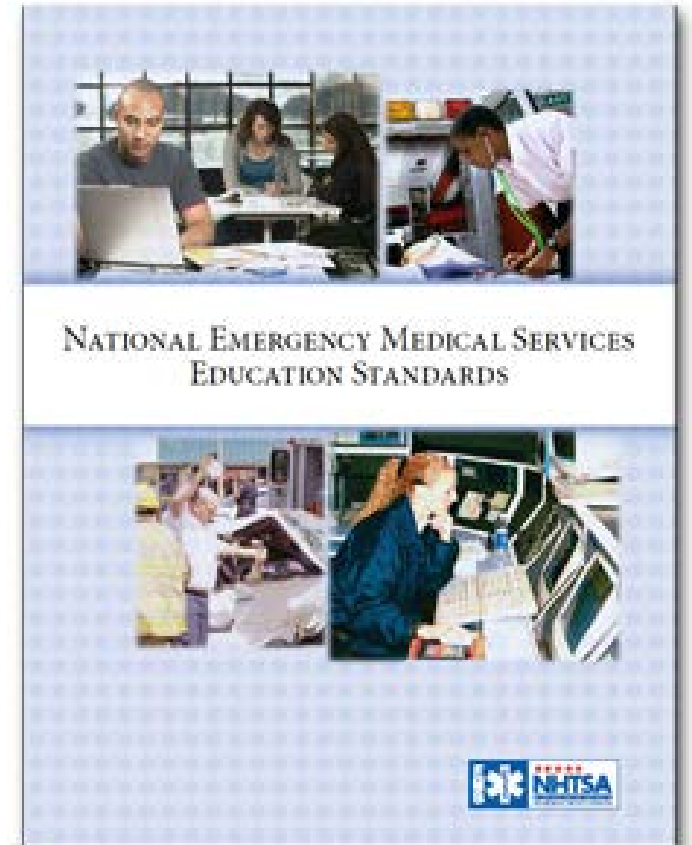


## White Paper Report on Excited Delirium Syndrome

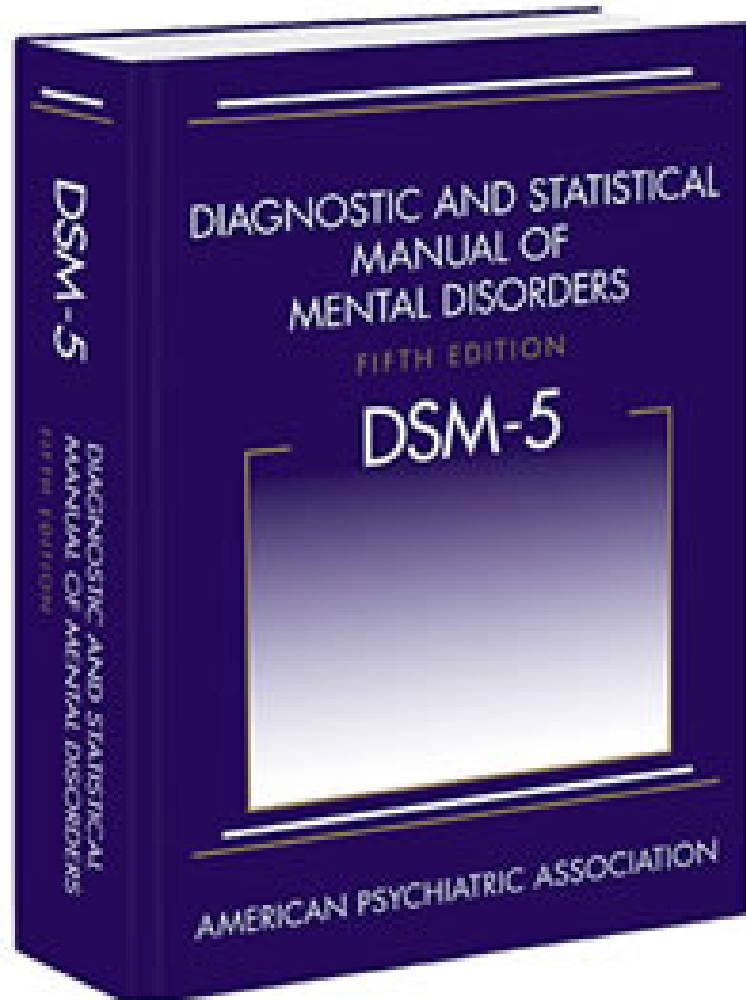
ACEP Excited Delirium Task Force

September 10, 2009

“agitated delirium”



*Not Without Controversy...*



The Washington Post  
*Democracy Dies in Darkness*

Local

‘Excited delirium’ cited in dozens of deaths in police custody. Is it real or a cover for brutality?

Slate



JURISPRUDENCE

THE LAW, LAWYERS, AND THE COURT.

JUNE 11 2015 1:32 AM

## Dying of Excitement

Police often blame suspects’ deaths on “excited delirium.” Is that a diagnosis or a cover-up?



By Dahlia Lithwick



# Pathophysiology

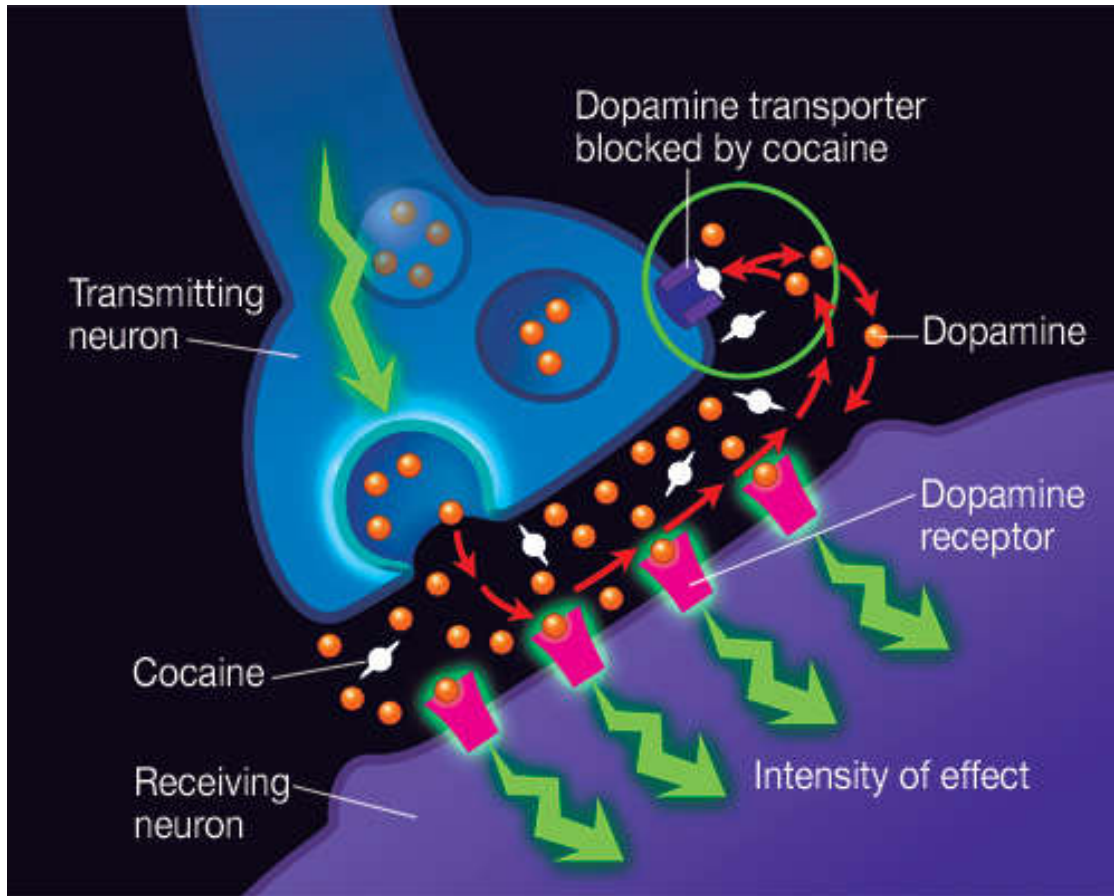


1. Drug use: cocaine, methamphetamines, PCP, LSD, bath salts, K2

2. Psychiatric illness: schizophrenia & bipolar

3. Abrupt cessation of psych meds



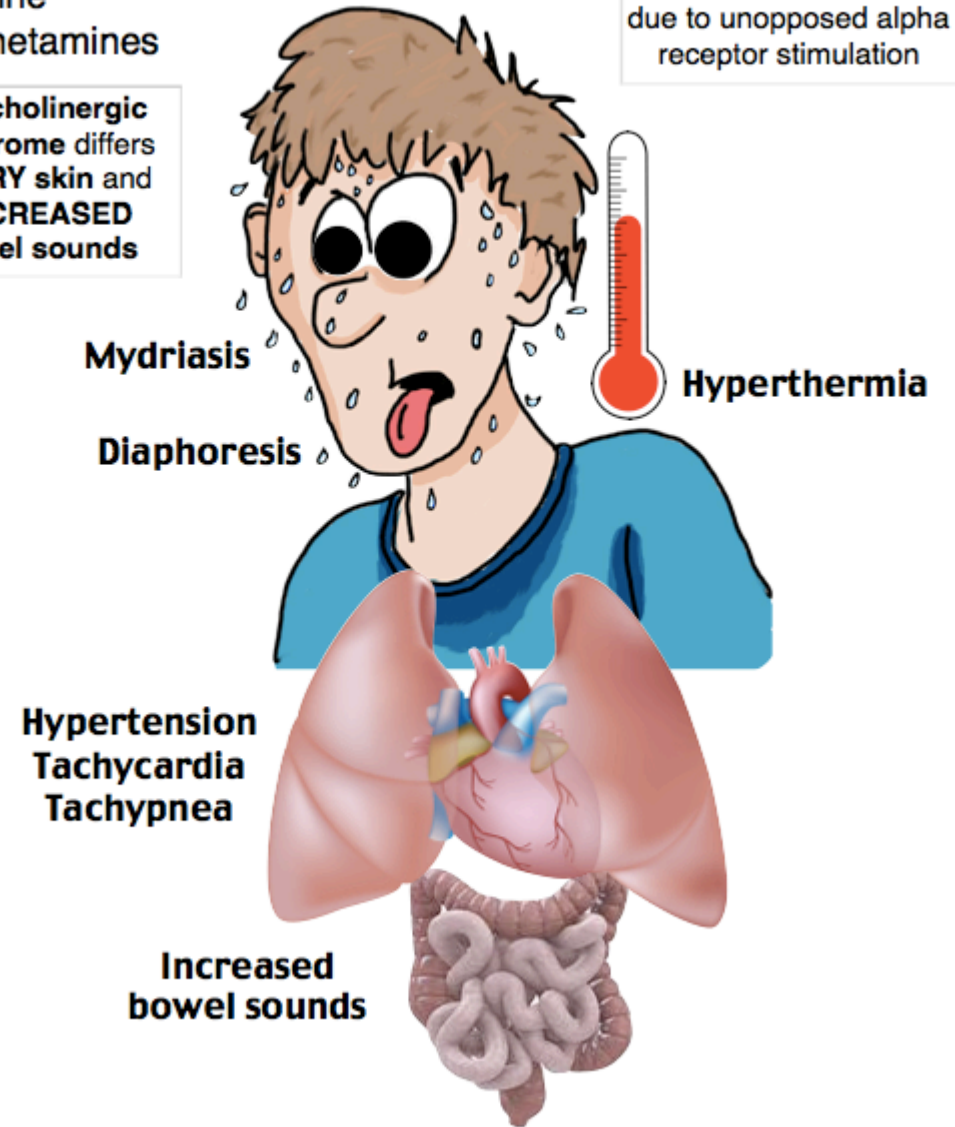


# Sympathomimetic Toxidrome

Cocaine  
Amphetamines

Anticholinergic  
toxidrome differs  
by **DRY** skin and  
**DECREASED**  
bowel sounds

**Avoid beta-blockers**  
due to unopposed alpha  
receptor stimulation



Dopamine → Schizophrenia?

Schizophrenia meds block Dopamine



# Recognizing the patient



Violent behavior

Agitation

Psychosis

Yelling

Destruction of inanimate objects

Superhuman strength

Extreme resistance to physical restraint

Increased tolerance to pain

Hyperthermia

Tachycardia

Tachypnea

# Recognizing the complications

Metabolic Acidosis

Rhabdomyolysis

Sudden Death

Secondary Trauma

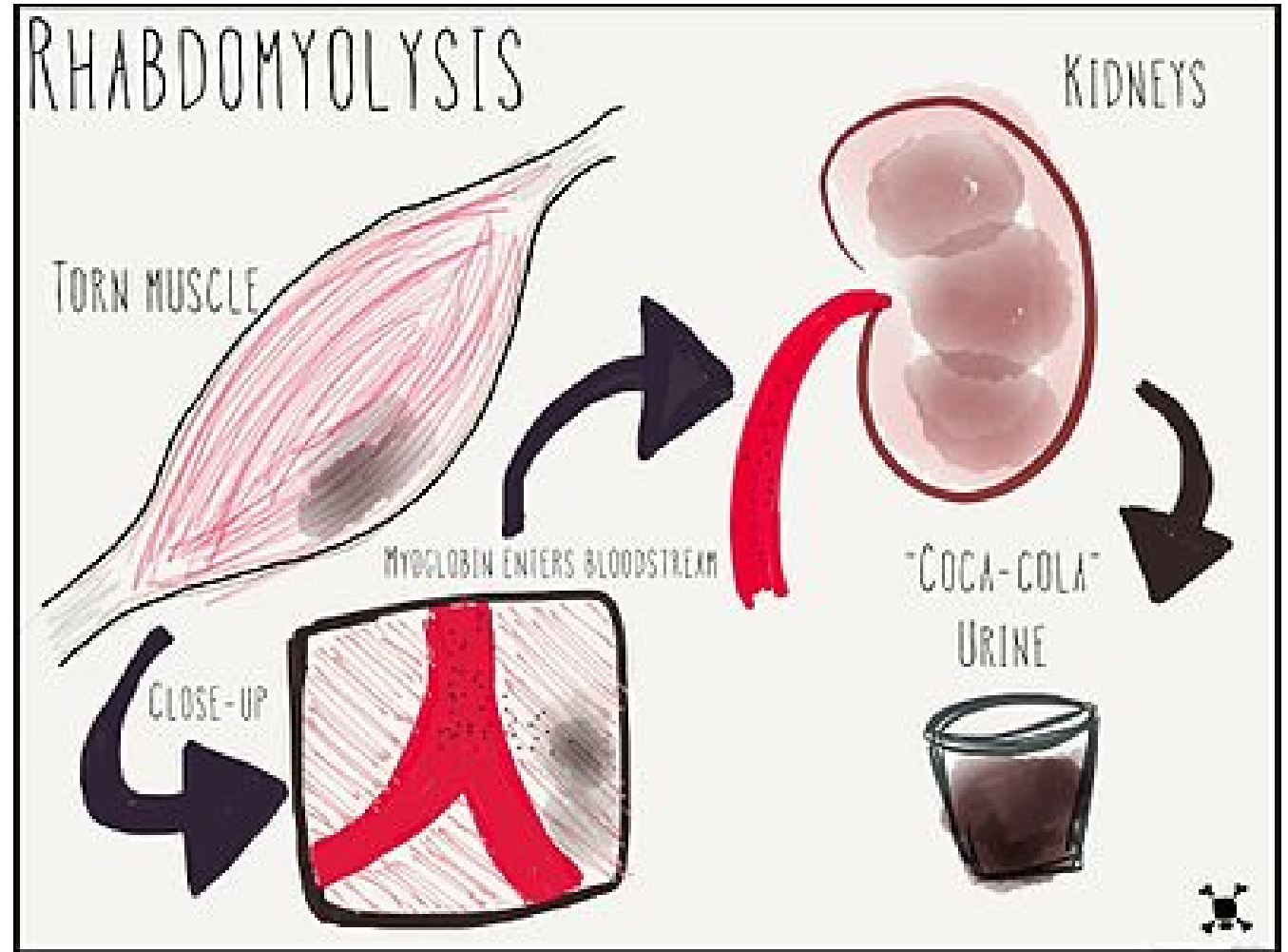
# Metabolic Acidosis

- Sympathomimetic & agitated → need to blow off CO<sub>2</sub>
- Cant do this if restrained improperly
- CO<sub>2</sub> builds → respiratory acidosis
- Lactic acidosis occurs eventually



# Rhabdomyolysis

- Muscle breakdown
- Restraints & Fighting
- Acute Kidney Injury
- Hyperkalemia
- Hypovolemia



# Sudden Death

Likely combination of several factors:

- Positional asphyxiation
- Cardiotoxicity from the drugs
- Long QT
- Cardiac sensitivity (acidosis & hyperK)





# Secondary Trauma

- Before the encounter
- During the restraint

*Full trauma survey always*



# Differential

- Hypoxia
- Hypoglycemia
- Head Trauma
- Infection
- Epilepsy
- Heat Stroke

- Anticholinergic Toxidrome
- Neuroleptic Malignant Syndrome (NMS)
- Serotonin Syndrome
- Thyroid Storm

# Treatment

Scene Safety is most important

- Protect responders
- Protect patient
- Protect bystanders

“Dual Response”

- train together
- have a plan



# Verbal Deescalation

- Reduce L&S if possible
- Calm patient, one provider, try to develop rapport

*Prepare for plan b from beginning*



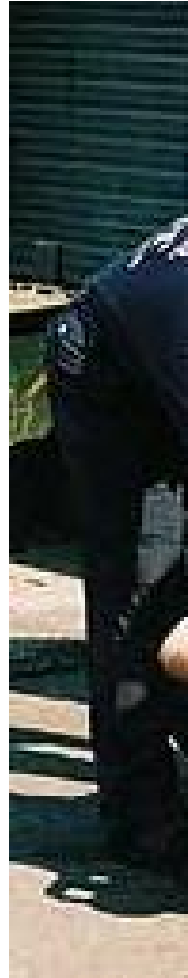


# Physical Restraints

## Plan & prepare

- One extremity per provider,
- One to head,
- One to stretcher,
- One to help w/ restraints

## Soft restraints (PIC)





# Restraint NEVERS

- Hog tie
- Prone
- Chest or neck compression



**DEATH IN RESTRAINTS**



THE DENVER CHANNEL.COM

**QUESTIONS SURROUNDING USE OF FORCE**  
**CITY'S INDEPENDENT MONITOR WARNED OF FORCE**



CALL 7 INVESTIGATORS

# A death in restraints after 'standard procedure'

Joshua Messier was having a schizophrenic attack, then died as Bridgewater state prison guards subdued him. The medical examiner called it homicide, then changed her mind. No one has been prosecuted, or even reprimanded, for the death of a young man in state care.



## Top 10 Trending Articles

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...RTIFIER  
Due to WITH BLUNT IMPACT OF HEAD AND COMPRESSION OF CHEST,

## Restrained Patient's Death May End Hospital's Medicare

Federal officials say a South Carolina hospital will lose its Medicare contract unless it makes changes in how it protects the safety of patients after a man who attacked people in the emergency room died after being strapped face down on a gurney.

March 29, 2017, at 12:45 p.m.



**AP**

GREENVILLE, S.C. (AP) — Federal officials have told a South Carolina hospital it will lose

Today's

# Sedation

- As soon as possible, with restraints is possible
- Better than restraints & safer

- Pros & Cons of approach –
  - IV more predictable but needle stick risk & losing IV
  - IM less predictable, slower onset but safer, easier access
  - IN has bite risk but is needleless





# Sedation Options

## **Benzos** – Midazolam, Diazepam, Lorazepam

- Slower onset, long half life (stacking risk), resp depression

## **Ketamine** – dissociative anesthetic

- Multiple uses, protects airway but can cause vomiting
- Other SEs are tachycardia, hypertension, laryngospasm, hypersalivation
- Cannot use in schizophrenics



# Once sedated & safe, now treat the complications

Hyperthermia → cool patient

Hypovolemia → fluid resus

Acidosis → bicarb

Rhabdomyolysis → fluids & bicarb

Full secondary survey → trauma from earlier or during restraints

Monitor airway → visible at all times, pulseox or capnography

## TABLE #: EXDS TREATMENT ALGORITHM

Scene safety: Involve law enforcement;

Apply physical restraints (avoid prone positioning and restraints that limit respiration);

Administer a sedative based on agency protocols;

Carefully monitor vitals, EKG and EtCO<sub>2</sub>; obtain 12-lead EKG and check blood glucose level;

Administer oxygen as needed;

Evaluate for and treat injuries;

Establish IV access and provide a fluid bolus;

Consider administering sodium bicarbonate if acidosis is suspected;

Provide cooling measures if hyperthermia is present.

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