

24 Hours? No Problem! Staying Awake Though The Night Shift

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BSN: December 2010

BA: English Literature, 1985

RN: staff nurse, emergency department
Saint Elizabeth Regional Medical Center
Lincoln, Nebraska (original diploma 2003)

EMT-P: 1997 (Lincoln Fire & Rescue 2001)



CEN: Certified Emergency Nurse since 2006

Saint Elizabeth Regional Medical Center
Lincoln, Nebraska



- Burn Unit:
Rotating Day/Night 12-hour shifts
- Emergency Department
12-hour Night Shifts

Bethesda-Chevy Chase (Maryland) Rescue Squad

- 12-Hour Overnights

Lincoln Fire & Rescue

Man burned in explosion at suspected meth lab

BY JASON SANDERSON
Crime reporter

Donald and Rosalee Brooks, 40-year-old mother and 44-year-old father, were taken to a hospital Monday after a suspected methamphetamine explosion when they lived in the city.

Two seconds later a man ran screaming from the house and close to flames on the roof and smoke coming from the house. They dropped the seeds and ran toward the house.

They stayed on the ground and covered the remaining faces with their arms. Smoke on the roof, they covered like a gas mask.

Then they walked as two into the house and disappeared. Nothing was visible except some the remains of a methamphetamine lab.

"I don't know where they went,"

Lincoln meth labs 2001
■ 2217 N. 47th St., Thursday
■ 4621 Brainerd Dr., Monday
■ 1 1/2 blocks, 7 1/2 blocks
■ 4533 S. 60th St., Jan. 7
■ 333 N. 10th Street, Jan. 11
■ 333 S. 44th St., Jan. 11

Donald Brooks said, "I thought it was black smoke that they didn't see around."

Rosalee Brooks suffered burns to a hand and forearm trying to help the injured man and respiratory distress as a result.

The unidentified man suffered severe burns over much of his body and was taken to Saint Elizabeth's Hospital Medical Center, where he remained in "extreme" critical condition, Lincoln Fire Director Chad



Lincoln firefighters and paramedics attend to the victim of an explosion and fire in a home at 2217 N. 47th St., Thursday.

Donald Brooks said, "I've seen him about out of fuel since on the first hand to his."

Donald Brooks said, "We got 300 670 St. Police Chief Tom Cassidy confirmed suspicion it was likely a meth lab was spreading on him."

Misuse after the kitchen and bathroom fire was extinguished, a yellow line of off-duty police officers on the scene Monday at 2217 N. 47th St. Police Chief Tom Cassidy confirmed suspicion it was likely a meth lab was spreading on him."

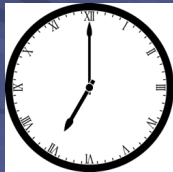
See BLAH, Page 2A

■ 24s

the night shift
(my natural habitat)



■ Lets get to know each other



What shift do you work?

- Nights
- (8 or 12s?)
- 24s
- Rotating

What does your life look like?

- Job
- Family
(spouse, kids, parents)
- House
(dishes, laundry, lawn, attic, basement...)
- School
- Pets

Nocturnal



- 1910: average American slept 9 hours/ night
- 1913: Edison invents the light bulb
- 1990s: average American sleeps 7.5 hours/night

“Night as Frontier”

- “Land of Opportunity”
- “Fewer Class Distinctions”
- “Decentralized Authority”
- “Lawlessness”
- “Helpfulness”

(Murray Melbin, 1987)

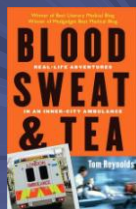
Advantages of the night shift

- “There is less management around— actually there is no management around.”



“It feels as if you own the world: There is no one else around, and anyone you do meet is normally shocked to be awake at night.”

Reynolds, 2008

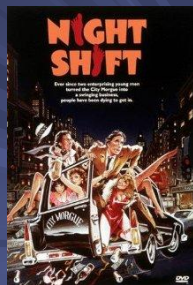


Insomnia (2002)

- C. Nolan (director)
- A. Pacino







What happens on the night shift...



Shift Work

- Health Implications of Shift Work:
- Dangerous For Your Patients?
- Dangerous For Your Health?
- Dangerous For Your Career?



Terrible schedules: the Navy "watch" system

- 19th Century:
- Two Watches
- Four Hour Watches
- At least they had grog!

Terrible schedules!: Firefighters

- “A-B-C”: every third
- Kelly Days
- Chicago Mayor Edward Kelly (1936)



Shift work: Dangerous for your patients?

- New England Journal of Medicine:
“Effect of Reducing Interns’ Work Hours on
Serious Medical Errors in Intensive Care
Units.”

(Landrigan et al, 2004)

- Traditional Schedule: (3 Interns)
0700-1500
0700-0700-1200
0700-1500

- Intervention Schedule: (4 Interns)
0700-1500
0700-2200
2100-1300

The Study

- 2203 patient-days
- 634 admissions
- 2888 hours of direct observation of interns

The Results:

- Traditional Schedule: 35.9 % more serious medical errors.
- BUT...
- Traditional Schedule: Mortality: 12.7%
- Interventions Schedule: Mortality: 14.5%

The Joint Commission
**Sentinel Event
Alert**

“Healthcare worker fatigue
and patient safety”



- • lapses in attention and inability to stay focused
- • reduced motivation
- • compromised problem solving
- • confusion
- • irritability
- • memory lapses
- • impaired communication
- • slowed or faulty information processing and judgment
- • diminished reaction time
- • indifference and loss of empathy

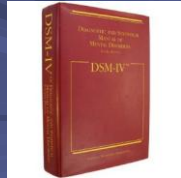
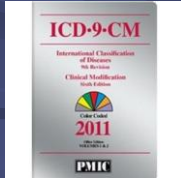
“To Err is Human,
But for Some Nurses, a Crime”
American Journal of Nursing
(Shalo, 2007)

“When Nurses Make Mistakes”
NYT
(Brown, 2011)

“...and in a real dark night of
the soul, it is always three
o’ clock in the morning,...”
Fitzgerald (1936)

Shift Work Sleep Disorder

- ICD-9: **327.36** - Circadian rhythm sleep disorder, shift work type
- DSM 307.45 Circadian rhythm sleep disorder



“When good sleep goes bad”

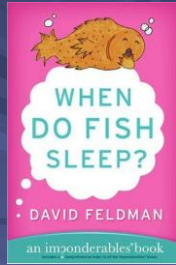
- Sleep apnea
- Narcolepsy
- Shift work paralysis



What is Sleep?



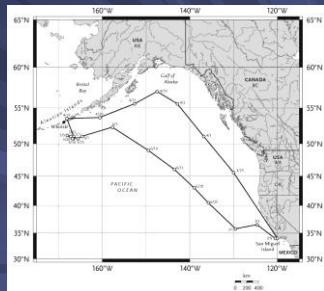
“When Do Fish Sleep?”





How Do SEALS Sleep?

■ Seal migration (three month tracking map)



uni-hemispheric
slow-wave sleep

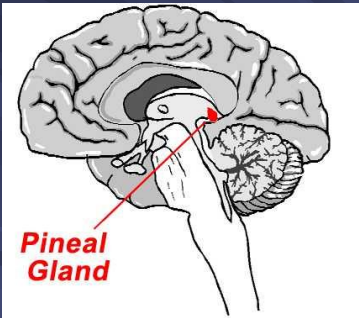


The pineal gland and melatonin

The
CHEMISTRY
of sleep



Pineal Gland



Melatonin

- Light
= decreased melatonin =
wakefulness
- Darkness
= increased melatonin =
sleep

“Adverse metabolic and cardiovascular
consequences of circadian misalignment”
(Scheer et al, 2009)

- 28 hour “day”:
- Increased serum glucose
- Increased insulin
- Decreased epinephrine levels
- Decreased LEPTIN

Leptin

- Hormone
- Acts on the hypothalamus
- Suppresses appetite
(Binds to same sites as appetite
stimulants)

Shift work:

Dangerous for your health!

- Food availability
- Meals out of synch with body rhythms

- Obesity
- Diabetes
- Cardiovascular Disease

circadian rhythms

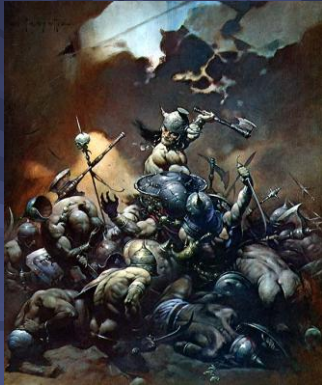
- Highs and lows
- Most alert: 0900-1100
- Lows: 0100-0400
&
1300-1600



How do WE stay awake?

- Meditation, life force, chi, balance
- NOT THAT LECTURE





(Frazetta, 1971)

Coffee!



caffeine

- EFFECTS
- SIDE EFFECTS
- HALF LIFE
- HABITUATION
- DOSAGES
- TITRATION



The History of Coffee

- Ethiopia:Kaldi: 9th Century
- 13th Century
- Italy 1890s
- Italian occupation of Ethiopia (1940s)



Europe discovers coffee (1601)

“...black as soote, and tasting not much unlike it.”

George Sandys

Coffee vocabulary

- Espresso
- Barista



Coffee vocabulary

- Cappuccino
- Latte



Brewing the perfect coffee

- Roast
- Grind
- Coffee maker
- Temperature

Between 195-205 degrees F
Six minute brew time

(americastestkitchen.com)



French Press





Rafael Sa'adah
Assistant Fire Chief
DC Fire & EMS



2011 James O.
Page/JEMS Award
Winner

- Cola
- Pop
- Soda



Caffeine and Sugar

- Coke & Pepsi
- Mountain Dew
- Jolt

Caffeine content of

- Tea 30 – 50 mg/ 6 oz cup
- Drip coffee 100 – 200 mg/ 8 oz cup
- Espresso 100 mg/ 2 oz cup
- Cola 34 mg/ 12 oz can
- Mtn. Dew 54 mg/ 12 oz can
- Red Bull 80 mg/ 8 oz can
- Decaf coffee 5 – 15 mg/ 8 oz cup

Caffeine & Men & Men Caffeine & Women & Women

- Journal of Applied Social Psychology
Memory, Psychomotor & Negotiation skills
(under stressful conditions)



(St.Claire & Hayward, 2010)

FDA limits on caffeine (in “cola-like” drinks)

- 71 mg / 12 ounce serving
- (Does NOT apply to “energy drinks.”)



“Food Additive”
v
“Supplement”

medicalizing sleepiness

- Diagnosing sleepiness
- Medicating sleepiness



Modafinil: (Provigil)

- Army (1999) : 40 hours of wakefulness
- Flight studies

- Math: better
- Physical abilities: better
- Mood questionnaire: little advantage

“Between modafinil & dextroamphetamine... there are indications that modafinil is the less efficacious.... Modafinil is more likely to produce side effects which could be problematic in aviation operations.”

Modafinil: (Provigil)

- Air Force (2006) 72 hours of wakefulness
- Ground operations

- Better physical and mental performance
- Side effects: headache and nausea

Enantiomer: molecular “flip”

Amphetmamine (Benzadrine)
&
Dextroamphetamine (Dexedrine)

Modafinil: (Provigil)
&
Armodafinil: (Nuvigil)

Armodafinil: (Nuvigil)

My experience

- Anecdotal
- Not scientifically or statistically valid
- Cannot be extrapolated to the experiences of other patients or subjects

- Rx
- Expensive
- Letter of need
- Coupons
- Samples
- Effects
- Side effects

napping



Energy Drinks



What's in this stuff?

- taurine
- glucuronolactone
- caffeine
- B vitamins
- glucose.

- Vegetarian
- Kosher
- Halal

■ Dietary Supplement Health and Education Act (1994)
■ Vitamins, minerals, herbs/botanicals & amino acids



amphetamines

Amphetamine (Benzadrine)
&
Dextroamphetamine (Dexedrine)

■ Adderall

amphetamines

- Military use
- Athletic use
- Academic use

– FDA schedule II medication

Caffeine

∨

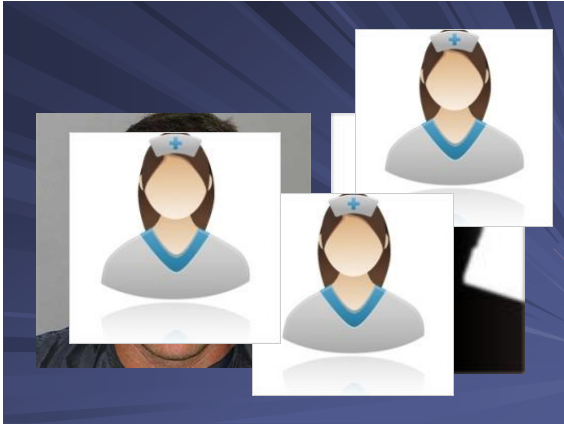
Dextroamphetamine

∨

Modafinil

“It’s always darkest
before the dawn.”

- The English theologian and historian Thomas Fuller
- *A Pisgah-Sight Of Palestine And The Confines Thereof*, 1650.
- “It is always darkest just before the day dawneth.”





Six AM: "the golden hour"

- Exercise
- Change activity/environment
- Aromatherapy
- B-12
- Qat



GOOD MORNING!



Caution: Shift work puts you at greater risk for MVC!



0700: SLEEP!

- Melatonin
- Blackout shades
- Temperature
- Benadryl
- Teas
- Oils
- Phones
- Families and noise

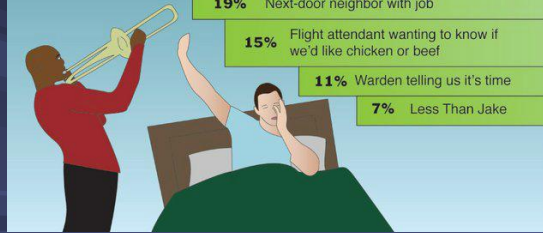


agrypniaphobia

Fear of Insomnia

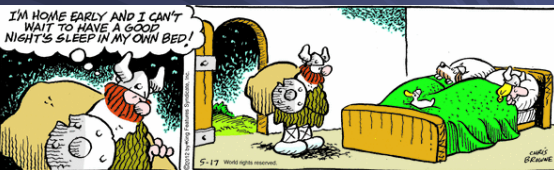
Who Dares Disturb Our Slumber?

- 25% Bleeding man beseeching us to warn the others
- 23% Girlfriend who thought you'd be into that
- 19% Next-door neighbor with job
- 15% Flight attendant wanting to know if we'd like chicken or beef
- 11% Warden telling us it's time
- 7% Less Than Jake



theonion.com

Welcome home...



WARNING:

Night Shift
E/R Nurse
Napping

If you knock
on this door,
It better be an
emergency!



Nap Well.
Work Safe.
Drive Carefully.
Sleep Tight.

Questions?
Comments?

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