



2015 - A Sedation Odyssey

Anthony S. Feck, DMD

2000-2014

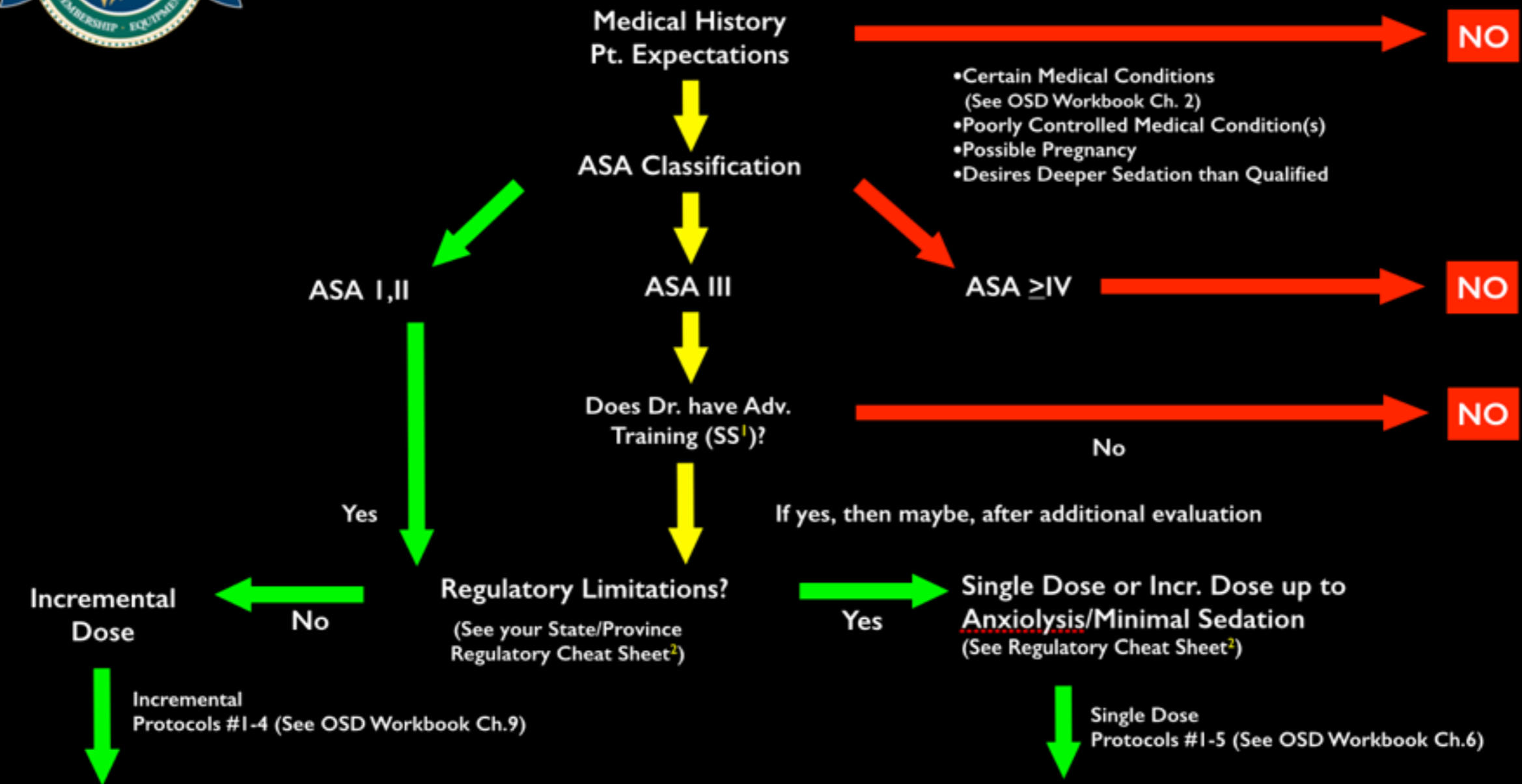


Vision and Passion

**Make sure the high-fear patient has
access to safe, comfortable care.**



Oral Sedation Patient/Protocol Selection



- Certain Medical Conditions (See OSD Workbook Ch. 2)
- Poorly Controlled Medical Condition(s)
- Possible Pregnancy
- Desires Deeper Sedation than Qualified

Considerations

- Use Protocol #1 unless any of the following:
- [D][X]³ Drug Interactions w/ TZM⁴ (Use #3 or #4)
- [D][X]³ Drug Interactions w/ LZP⁵ (Use #1 or #2)
- Benefit from HDZ⁶ (Use #2 or #4)

Considerations

- <18 y.o. (Use #4)
- Length of Appt. (# of Hrs. = #Protocol)
- [D][X]³ Drug Interactions w/ TZM⁴ (Use #1 or 4 or 5)
- [D][X]³ Drug Interactions w/ LZP⁵ (Use #1 or 2 or 3)
- Benefit from HDZ⁶ (Use #3 Or #5)

Key

¹Sedation Solutions™ DOCS Education

²Available at DOCS Courses or Membership Benefits

³Lexi-Comp® Drug Interaction Classifications

⁴Triazolam

⁵Lorazepam

⁶Hydroxyzine

2015 -

**What does the future hold for this
rapidly expanding modality?**

More of the Same Promise

The Promise of Sedation

- **Increased Quality of Treatment**
- **Increased Quantity of Treatment**
- **Increased Gratitude from Pts & Team**
- **Decreased Stress! Everywhere**
- **Decreased Failed Appointments**
- **Decreased Rejected Treatment Plans**

Who is a Candidate?

- ▣ **Severe Gag Response**
- ▣ **Local Anesthetic Resistant**
- ▣ **Time Constraints**
- ▣ **Complex Restorative Patient**
- ▣ **Post – Operative Pain Sensitive Patient**
- ▣ **Anxious, Phobic, Fearful Patient**

Does dental fear still exist?

Tremendous Need

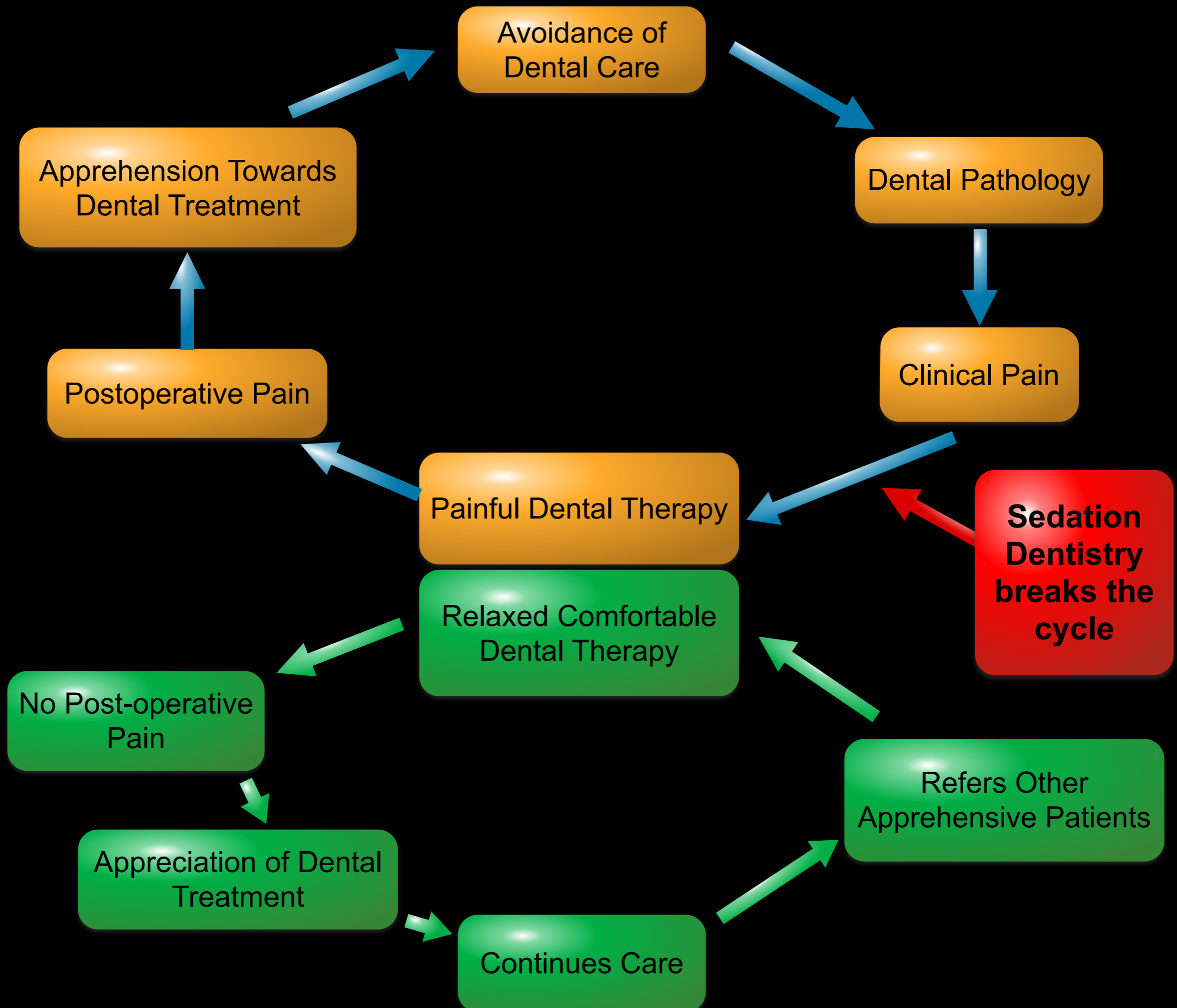
30-50% of Population Avoids the Dentist due to Fear

Tremendous Need

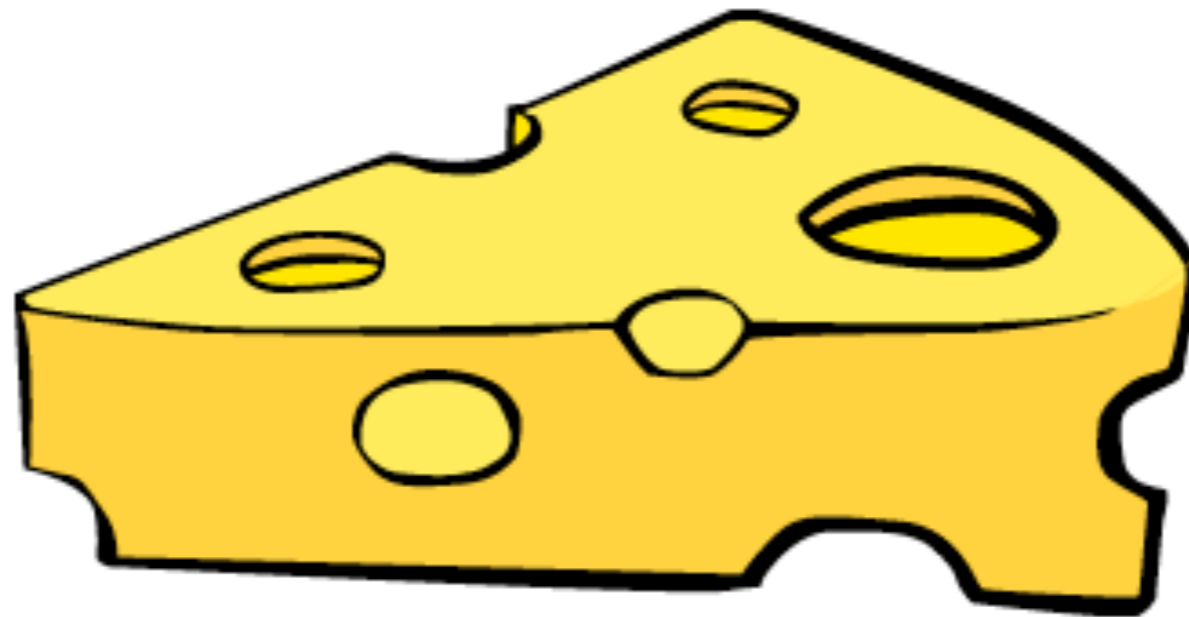
30-50% of Population Avoids the Dentist due to Fear

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“[www.ddschan.com/TheLibrary/
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agents and dosages to prevent
untoward complications during sedation.
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A Few New Twists

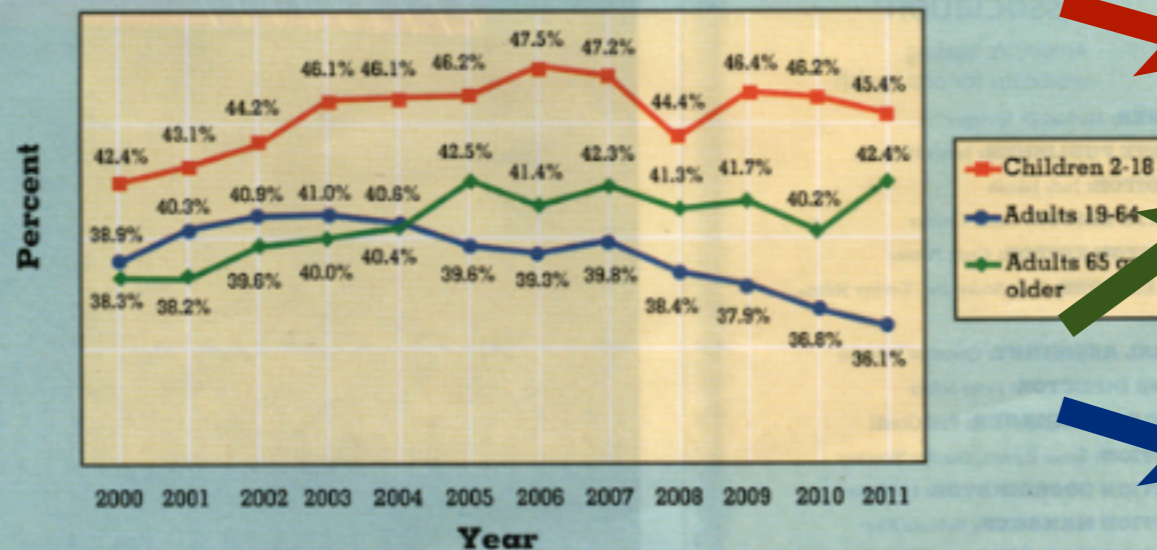




SNAPSHOTS OF AMERICAN DENTISTRY

Percentage of the population with a dental visit in the years, 2000-11

Dental care utilization among children increased from 2000 through 2003 and remained steady through 2011. Dental care utilization among working-age adults peaked at 41 percent in 2003 but declined to 36.1 percent in 2011. Among the elderly, dental care utilization increased from 38.3 percent in 2000 to 42.4 percent in 2011.



Source: American Dental Association, Health Policy Resources Center, Surveys of Dental Practice, October 2013.

Dental spending stays flat

Dental care spending remained flat through 2012 over the prior year, in part because working-age adults are visiting dentists less frequently, with fewer people covered by employer-sponsored dental benefits, according to a new analysis released by the American Dental Association.

The research, conducted by the ADA Health Policy Resources Center, shows that additional factors in the spending patterns include improvements in oral health, the erosion of benefits provided by state Medicaid programs and fee reductions among many private insurers.

National dental care expenditure reached \$111 billion in 2012, roughly the same as the previous year when adjusted for inflation. When population growth is taken into account, dental spending has been flat since 2008. The analysis covers three years of post-Great Recession recovery — suggesting that dental spending is not rebounding.

Overall U.S. health spending during the past four years has grown at the slowest rates ever recorded in the 53-year history of the National Health Expenditure Accounts, reflecting the lagged effects of the recent economic recession. Dental spending, how-



Research shows fewer people are covered by employer-sponsored dental benefits, and working-age adults are visiting dentists less frequently. Result: Year-over-year spending on dental care isn't changing much. Photo/Bentson Vladimir Mucibabic, www.dreamstime.com

ever, began to slow in the early 2000s before the onset of the recession.

The elderly continue to be the age group with the highest level of dental spending, driven primarily by gains in private dental benefits and higher demand for care.

Read the full research brief at www.ada.org/sections/professionalResources/pdfs/HPRC_Brief_0114_1.pdf.

The ADA has advocated for the public's health and promoted the art and science of dentistry since 1859. Its research facilities develop and test dental products and ma-

terials that have advanced the practice of dentistry and made the patient experience more positive. The Journal of the American Dental Association is the ADA's flagship publication and one of the most-read scientific journals in dentistry.

For more information about the ADA, visit www.ada.org. For more information on oral health, including prevention, care and treatment of dental disease, visit the ADA's consumer website www.mouthhealthy.org.

(Sources: American Dental Association)

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PUBLISHER & CHAIRMAN

Torsten Oemus t.oemus@dental-tribune.com

PRESIDENT & CHIEF EXECUTIVE OFFICER

Eric Seid e.seid@dental-tribune.com

GROUP EDITOR

Kristine Colker k.colker@dental-tribune.com

EDITOR IN CHIEF DENTAL TRIBUNE

Dr. David L. Hoexter feedback@dental-tribune.com

MANAGING EDITOR U.S. AND CANADA EDITIONS

Robert Selleck r.selleck@dental-tribune.com

MANAGING EDITOR

Fred Michmershuizen
f.michmershuizen@dental-tribune.com

MANAGING EDITOR

Sierra Rendon s.rendon@dental-tribune.com

PRODUCT/ACCOUNT MANAGER

Jan Agostaro
j.agostaro@dental-tribune.com

MARKETING DIRECTOR

Anna Kataoka
a.kataoka@dental-tribune.com

EDUCATION DIRECTOR

Christiane Ferret c.ferret@dtstudyclub.com

ACCOUNTING COORDINATOR

Nirmala Singh n.singh@dental-tribune.com

Tribune America, LLC
116 West 23rd St., Ste. #500
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(212) 244-7181

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BRIEFS

ADA 2014 registration open: travel discounts available

Registration for ADA 2014—American Dental Meeting in San Antonio opened May 1 at ADA.org meeting.

Airline, ground and hotel discounts for the Oct. 9-14 meeting are listed on the website under Travel.

ADA 2014 will feature more than 300 continuing educa-

Gallup: One-third of Americans had no dental visit in past year

BY KELLY SODERLUND

WISCONSIN—More than one-third of Americans say they did not visit the dentist at all in the past year, according to a new Gallup poll.

The two-thirds of U.S. adults in 2013 who said they did visit the

INSIDE Dentists running for Congress, Page 6

dentist at least once in the past 12 months is the same percentage as the one reported in 2008. Women are more likely than men to report visiting the dentist annually.

The report, released April 28, details findings based on interviews

in 2013 with 178,072 American adults and interviews in 2008 with 354,645 adults as part of the Gallup-Healthways Well-Being Index. Results for all years between

See GALLUP, Page 5

MyView

Continued from Page 4

to see a VA dentist because of his experience with the military dentist.

I told him, "Well, first, you are in control. If I do anything that bothers you or if anything hurts, stop me. If it is just getting to be too much for you to be here one minute longer, raise your hand and I will stop. Would it be OK if I tried to do some cleaning?" He gave me a hesitant "OK."

I worked above the gingival tissue and showed him some of the bigger pieces of calculus that I had removed and discussed what

Gallup

Continued from Page 1

2008 and 2013 are similar.

Among the findings:

- Fifty-five percent of both African-Americans and Hispanics reported visiting the dentist in the past year. Whites and Asians are at about 70 percent.

- There are smaller differences across age groups in reported dental behaviors. Adults age 18-29 are least likely to have visited the dentist, but only marginally less so than those who are middle aged or older. An improved rate among seniors since 2008 is offset by a

similarly sized decline among those 30-44.

- The most pronounced differences in dental habits are those across income groups. Those who earn \$120,000 or more annually are about twice as likely as those who earn less than \$12,000 to say they visited the dentist in the past year—82 percent and 43 percent, respectively. Dental visit rates have held steady since 2008 for higher income individuals, while they have declined for all other groups, particularly for low- and middle-income households with incomes between \$14,000 and \$60,000 per year.

- Dental visit rates are essentially unchanged in all regions compared with 2008.

Rates are lowest in the South—60 percent—and highest in the East—69 percent.

- Married adults are more likely than single adults to visit the dentist.

The ADA recommends all adults visit their dentists regularly. Regular dental visits are important because they can help spot oral health problems early on when treatment is likely to be simpler and more affordable. MouthHealthy.org, the

ADA's website for the public, lists 15 signs that should prompt people to visit the dentist: MouthHealthy.org/en/dental-care-concerns/questions-about-going-to-the-dentist. ■



Top 100 Careers for 2014

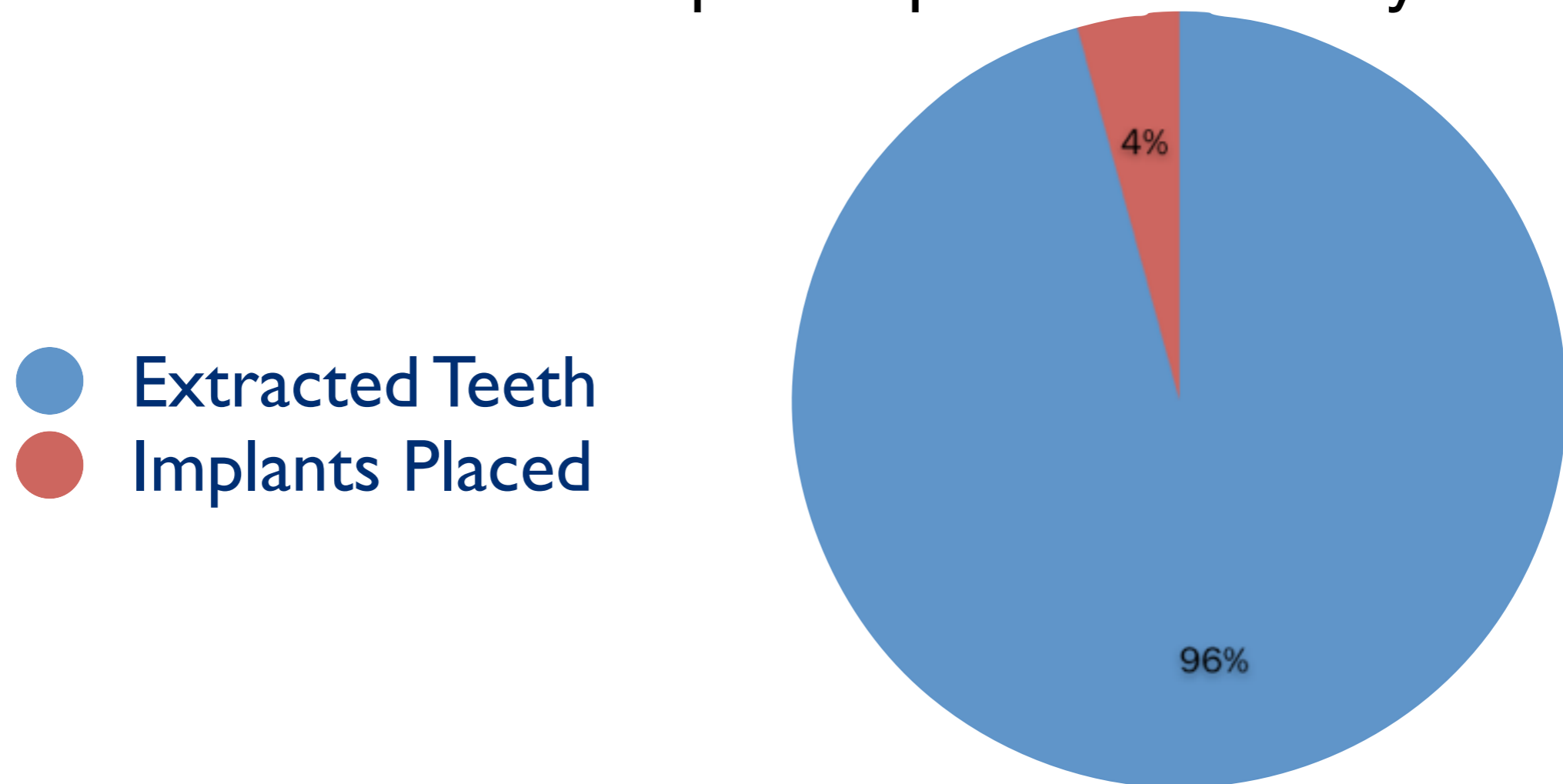
While there are quite literally thousands of different career options to choose from, not all careers are equal. The fact is, some career options are quite simply better than others. The list of top 100 careers for 2014 below are ranked based on a number of criteria including employment opportunity, work-life balance, job security, and last but not least, earning potential. While we do not assume that these jobs offer the best career path for everyone, they do offer just the right balance for many aspiring career professionals.

Rank	Occupation	# of Jobs	Median Salary	Unemployment Rate
1	Dentist	27,600	\$142,750	0.7%
2	Registered Nurse	712,900	\$65,790	2.0%
3	Pharmacist	69,740	\$113,410	3.2%
4	Computer Systems Analyst	120,440	\$78,670	2.5%
5	Physician	168,330	\$183,270	0.7%
6	Database Administrator	33,600	\$75,390	1.3%
7	Software Developer	143,400	\$89,530	4.0%
8	Physical Therapist	65,740	\$77,930	4.7%
9	Web Developer	65,740	\$77,390	4.7%
10	Dental Hygienist	68,300	\$69,480	2.8%

*Source -
CareerProfiles
career and job
search guide

The Opportunity

~ 45 million teeth removed annually in the United States
~2 million dental implants placed annually



*Source - American Dental Association

This implies a large, and currently unmet, need for implant dentistry.

In fact, according to some sources, the worldwide dental implant market, including final abutments and biologics, is expected to grow to **\$7.9 billion annually by 2015**, which represents compound annual growth of 13%.

Therefore, it is imperative for all dentists to become proficient in implant dentistry, in order to meet the growing demands of patients for an effective solution to the problem of tooth loss.



The Micro-Evolution of Implant Dentistry

Complex
Slow
Traumatic
Expensive



Simple
Fast
Less Traumatic
More Affordable

Where is Implant Dentistry Headed?

Implant Dentistry:
Specialty Service

Routine GP Procedure

GPs are expected to place
80% of implants



Trends - Time & Convenience

- 1. Consumers believing more and more that health care providers should cater to their schedule**
- 2. Along with cost of care and fear, limited time is one of the three most common reasons consumers give for not visiting the dentist**

Therefore, the more efficient and convenient the delivery of care can be made, the higher the utilization rate.



Trends - The ASAll Patient

When compared to the aggregate of its peer countries, the U.S. fares worse in the following health areas:

- **Sexually transmitted infections**
- **Drug-related mortality**
- **Obesity and diabetes**
- **Heart disease**
- **Chronic lung disease**
- **Disabilities such as arthritis and activity limitations**

Source - PBS NewsHour, Sara McHaney, Jan. 9, 2013

Trends - Prescription Drugs

- **4.5 Billion prescriptions written in the US annually**
- **47% of American adults take prescription drugs**
- **35% of American Adults take at least one**
- **12.5% of American adults take 3 or more**
- **7.5% of American adults take 4 or more**



Source: [New York Times 2013/03/19/business/use-of-generics-produces-an-unusual-drop-in-drug-spending](https://www.nytimes.com/2013/03/19/business/use-of-generics-produces-an-unusual-drop-in-drug-spending)

Prescription Drugs in America

Risks:

Hospital Admissions

16%



16% of hospital admissions are related to adverse reactions to medicines

Drug Reactions

70

There are **70** potential reactions in the average prescription drug

Cause of Death



4th leading cause of death in the U.S. ahead of pulmonary disease, diabetes, AIDS and automobile deaths

Number of Deaths



10x more deaths per year from adverse drug reactions to properly prescribed and administered drugs than from illegal drugs (106,000 : 10,000)

Source: New York Times 2013/03/19/business/use-of-generics-produces-an-unusual-drop-in-drug-spending

Current legal and regulatory landscape regarding sedation in dentistry and its likely evolution over the next decade

Education

15 states require more than 24 hours of education for moderate sedation permit/multiple dosing

Eight states require an IV permit to perform moderate sedation (oral or IV)

As state regulatory agencies react to isolated sedation misadventures, the trend is to increase educational requirements

Current legal and regulatory landscape regarding sedation in dentistry and its likely evolution over the next decade

Monitoring

Standard of Care is pulse oximetry for all forms of sedation

Trend is toward advanced monitoring of ventilation and heart rhythm for moderate sedation

Current legal and regulatory landscape regarding sedation in dentistry and its likely evolution over the next decade

Emergency Preparedness

AEDs and BLS training is required in all states

Trend is toward ACLS training for moderate sedation



Characteristics of the Sedation Driven Business Model

- **Higher Profitability**
- **Higher Production**
- **Fewer Patients**
- **Higher Case Acceptance**
- **Better Market Separation**
- **Higher Collection Rate**
- **More Efficiency**
- **Lower Overhead**

*** Maintenance of the Fee For Service Model in an age of Practice Model Polarization**

The Profit Equation

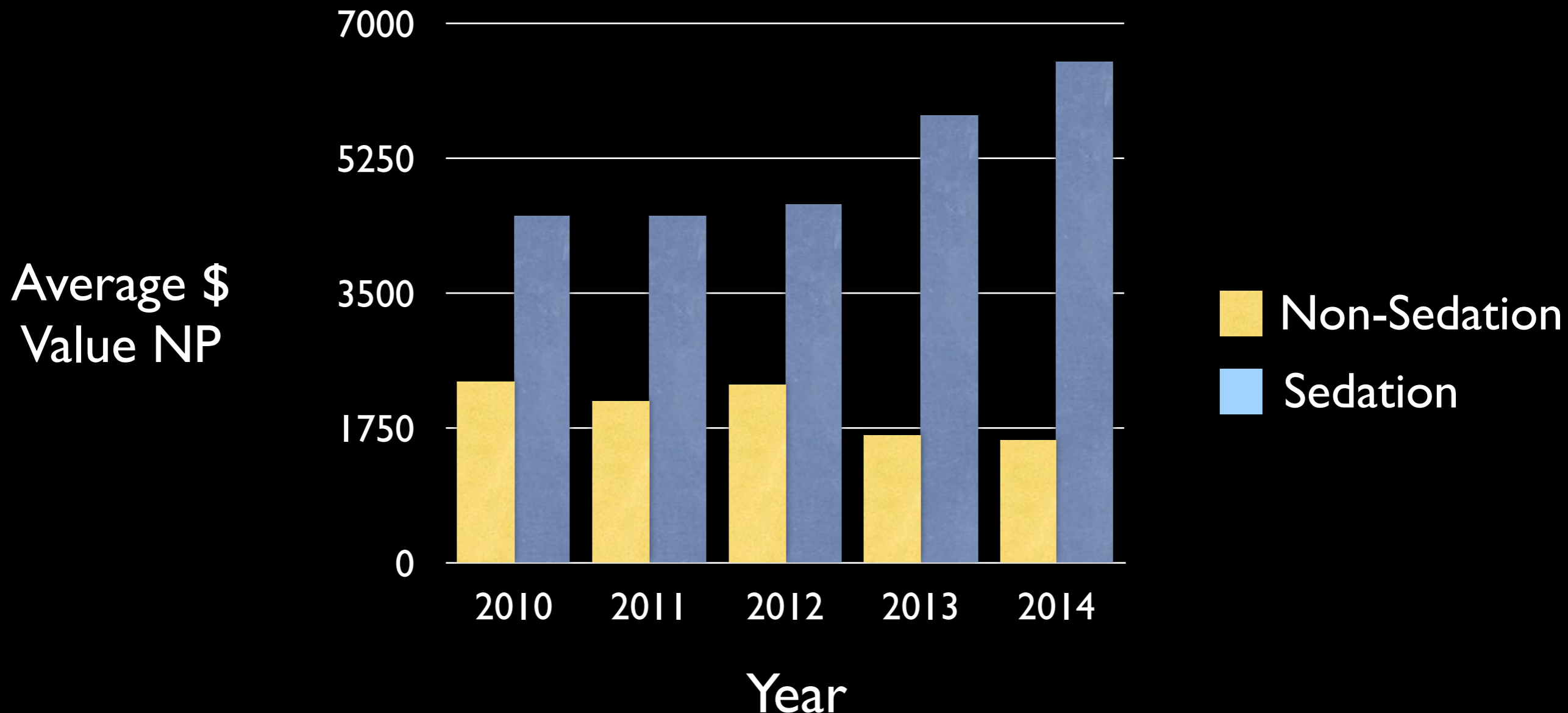
$$\text{PROFIT} = \text{PRODUCTION} \times \text{COLLECTION RATE} - \text{EXPENSES}$$

Sedation Dentistry makes you more productive



Quality of Patient

Sedation patients have a higher value to the business



Case Acceptance

**Sedation patients have a higher
rate of case acceptance**



Treatment Mix



**Sedation Dentistry
Efficient Implant Placement
Adult Short-Term
Orthodontics**

Quantity of Patient

**The population of sedation candidates
remains large & constant**



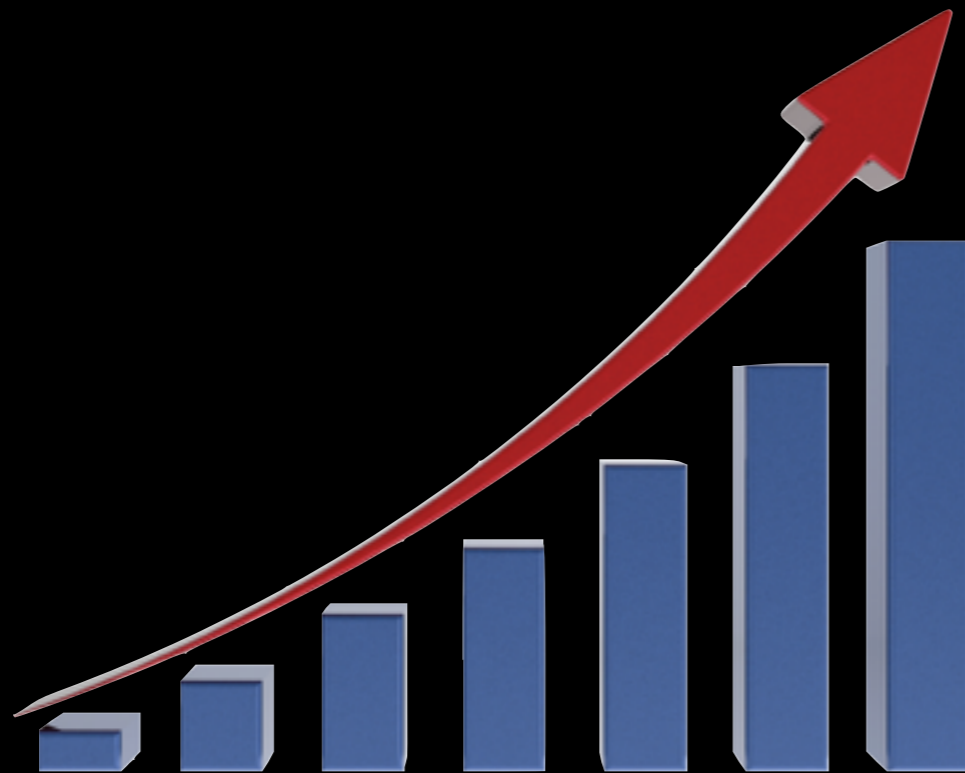
Clinical Speed

Scheduling Efficiency

Sedation Dentistry is more efficient



Sedation Dentistry has a high collection rate and low overhead



Latest advances in sedation equipment



Latest advances in sedation equipment



Latest advances in sedation equipment

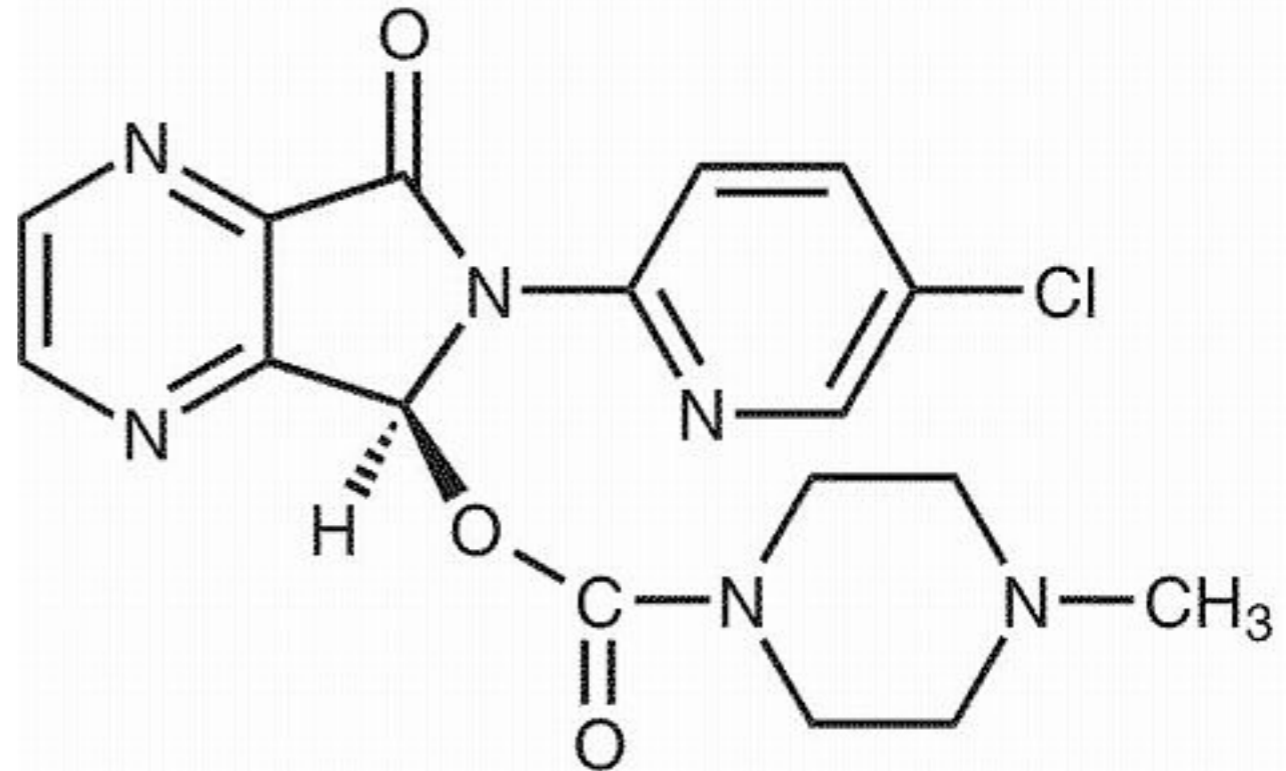


Characteristics of the “ideal” sedation medication

- **High Therapeutic Index**
- **High Efficacy**
- **Reversible**
- **Short Half-Life**
- **Low Cost**
- **High Potency**

Eszopiclone (Lunesta)

- **Good Efficacy - On-Label - tx. of Insomnia**
- **Good Potency - MRD 3mg**
- **Reversal - Flumazenil (works on GABA receptors)**
- **Good Therapeutic Index**
- **Pregnancy Risk Factor - C**



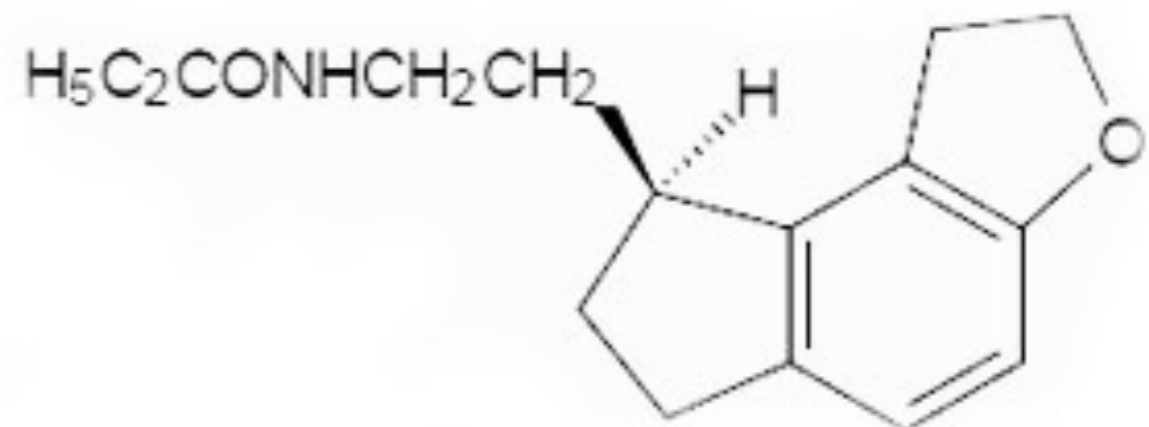
Eszopiclone (Lunesta)

- Onset of Action - 1 hr.
- Few Side effects - Headache (15-21%)
- Intermediate Half-Life - 6 hrs.
- Expensive



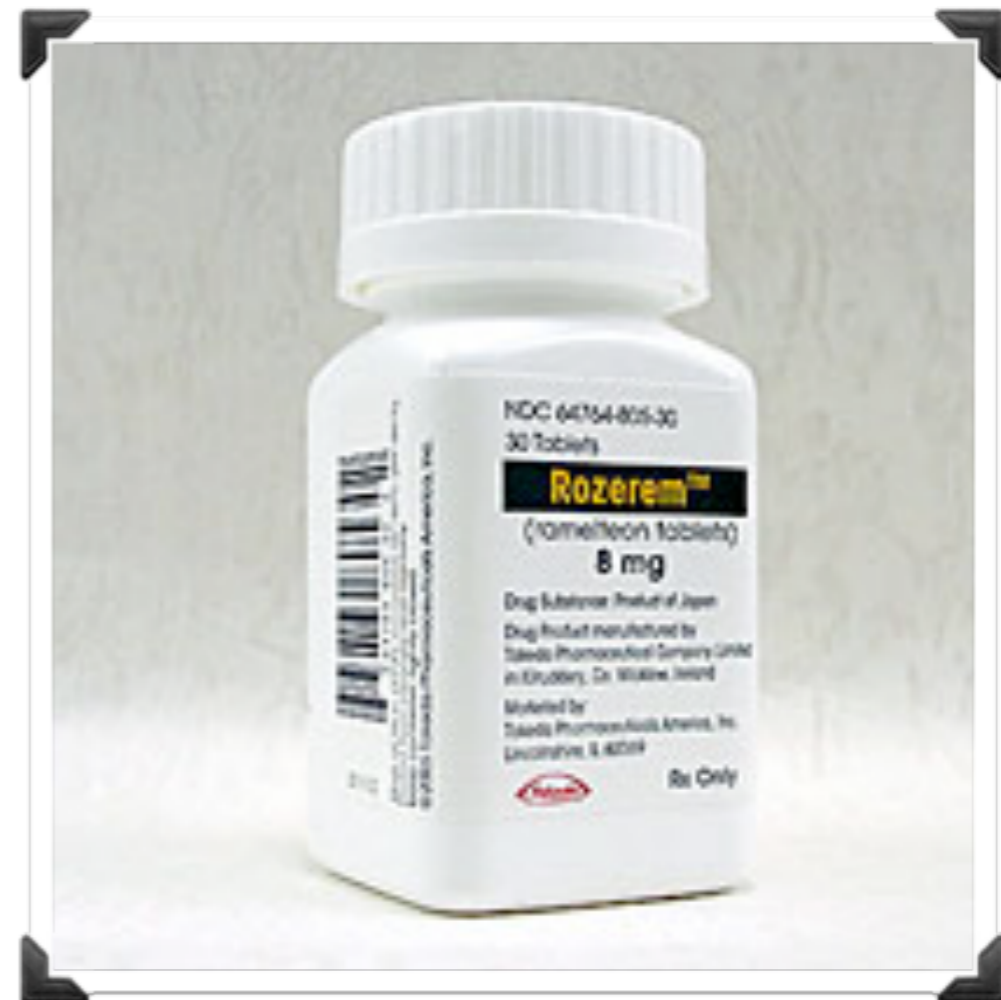
Ramelteon (Rozerem)

- **Not a controlled substance**
- **Fast Onset of action - 30 minutes**
- **High Therapeutic Index**
- **Side Effects - None**
- **Short Half-Life - 1-3 hours**
- **Pregnancy risk factor C**

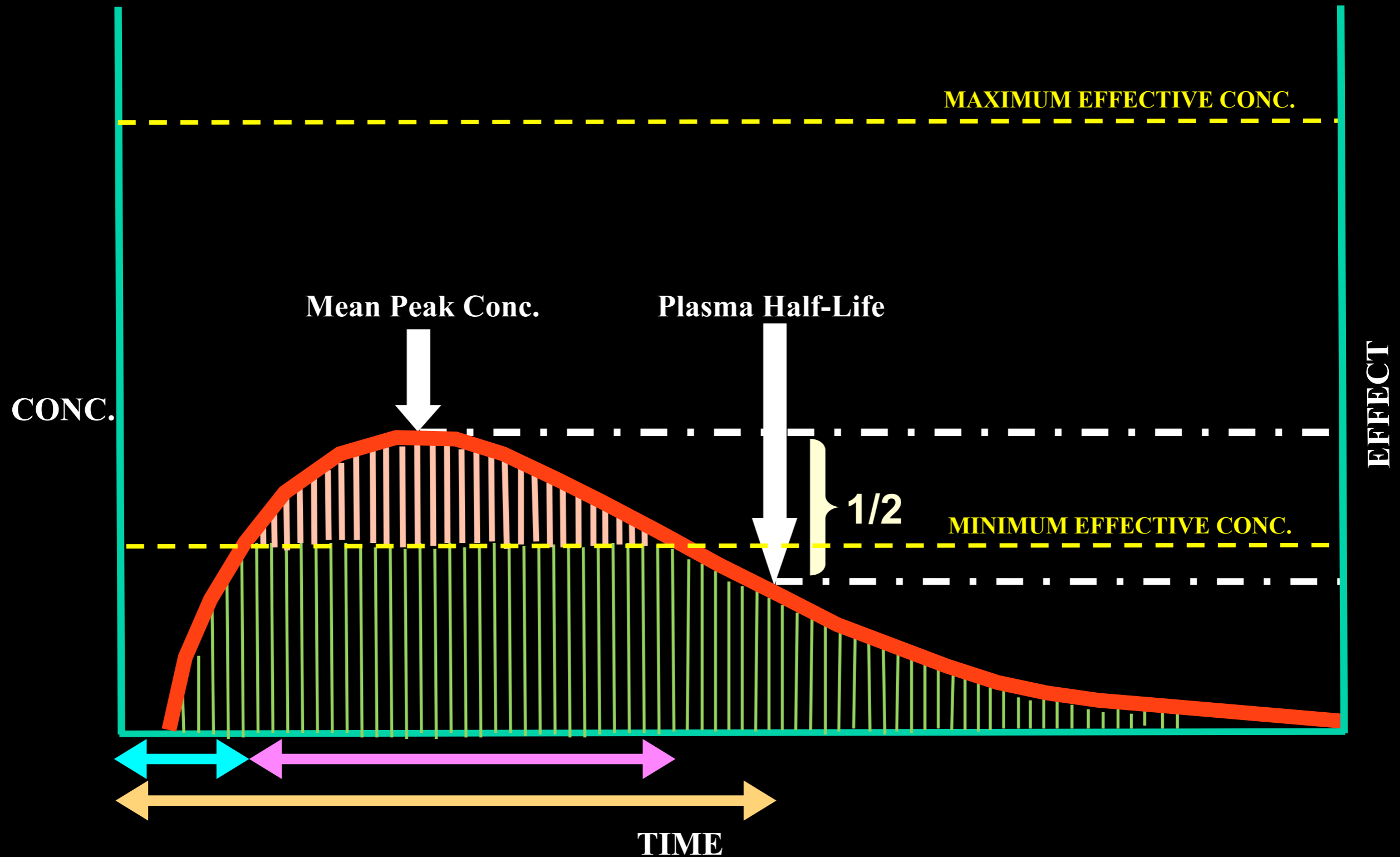


Ramelteon (Rozerem)

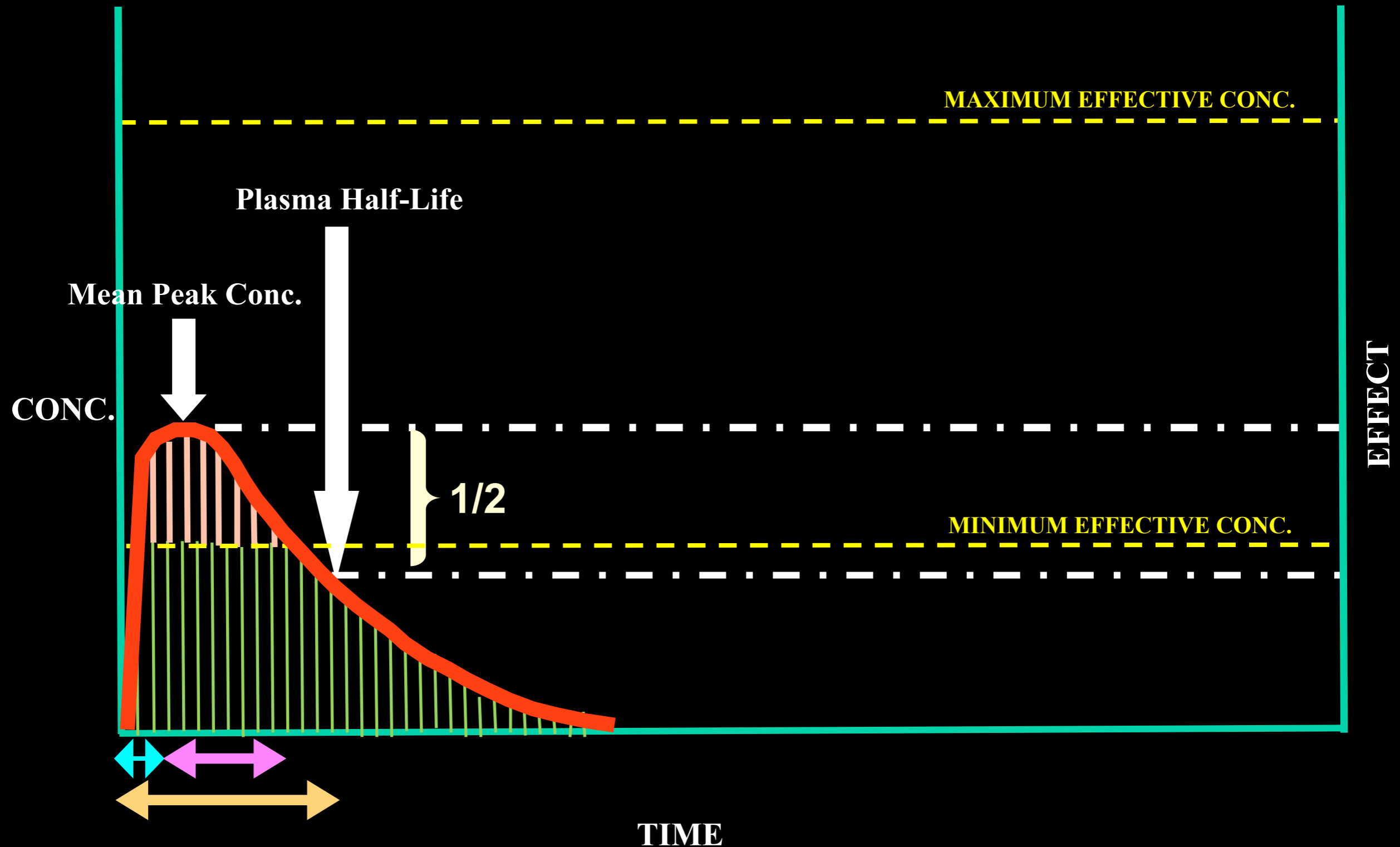
- **Moderate Efficacy - on-label use tx. of insomnia**
- **Low Potency - 8mg MRD**
- **Reversal - None (works on Melatonin receptors)**
- **Expensive**



Time-Conc. Curve (Oral)



Time/Conc. Curve (IV)

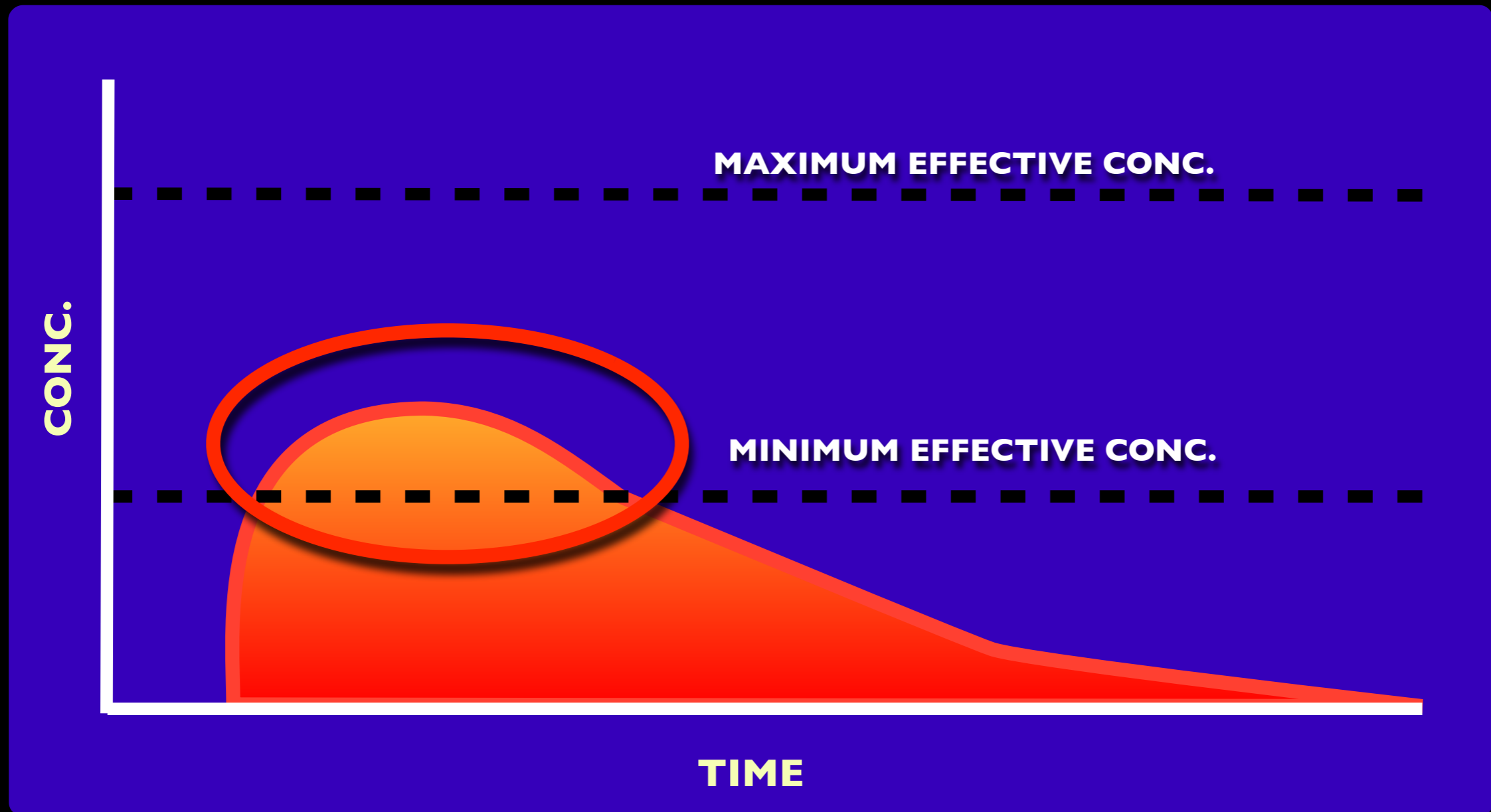


Amount of Night Before Dose of Diazepam Relative to Patient Characteristics

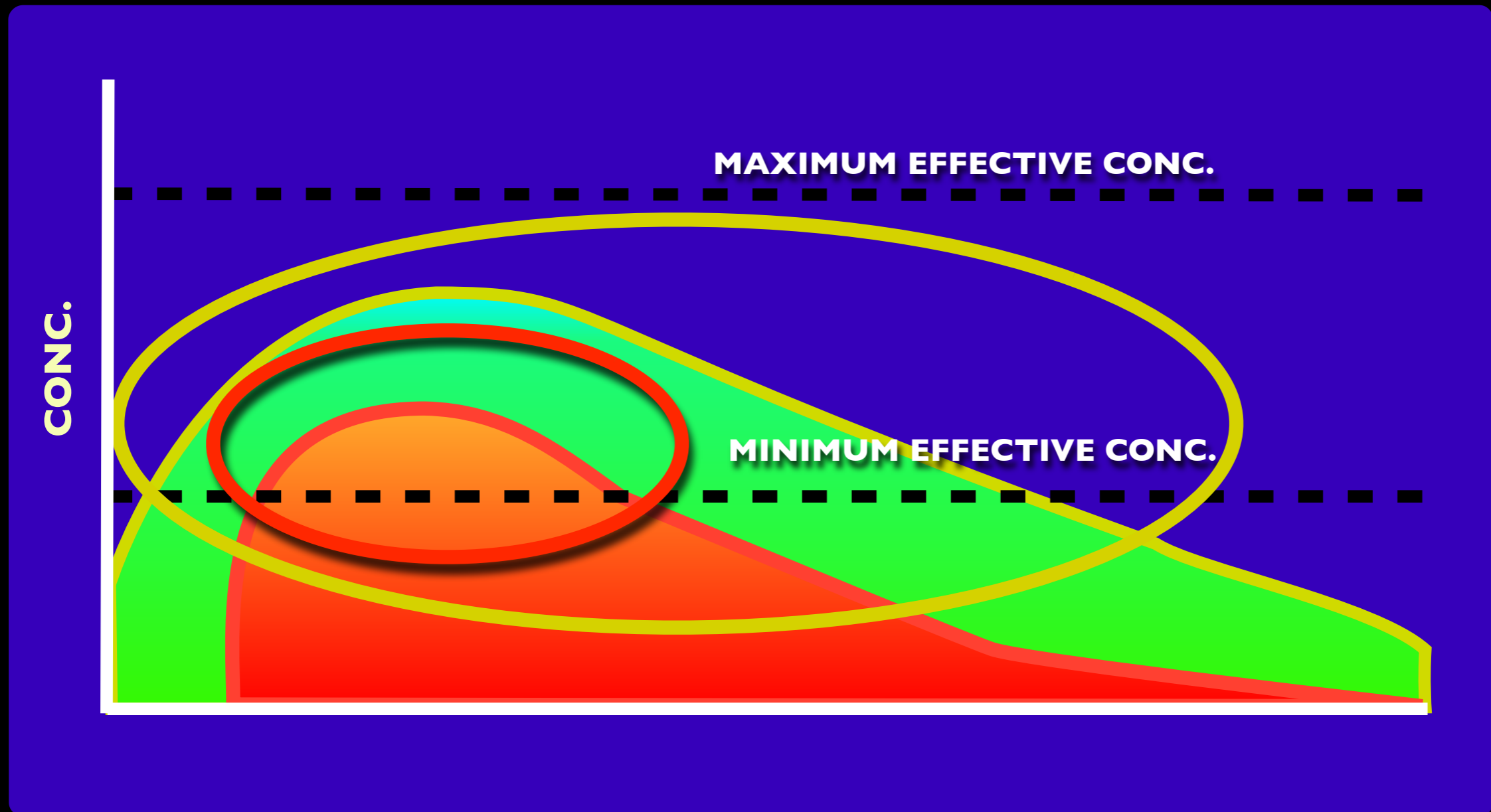
Factor \ Dose	0 mg	2.5 mg	5 mg	10 mg
Age		≥ 65	NO	NO
BMI		≥ 30		
History		Hyper-response	Normoresponse	Hyporesponse
Existing Medications	≥ 3 CNS Drugs &/or Insomnia Drug, or [D] or [X] Interaction between DZP & existing medication	2 CNS Drugs	0-1 CNS Drug	
Other	Patient drives &/or works on the day of prior to the sedation appointment	NO	NO	NO

TIME/CONC. CURVE

ONE DOSE OF AN ANXIOLYTIC DRUG



ONE DOSE OF AN ANXIOLYTIC DRUG plus LA benzo the night before



Minimal Sedation Protocol #1: up to 1 hour – on adults 18 and older

- Diazepam – night before, 0 – 10mg, swallowed
- Zaleplon – in office, 45 min. prior to beginning tx, 5 - 15mg, swallowed
- Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Minimal Sedation Protocol #2: up to 2 hrs on adults 18 and older

- Diazepam – night before, 0 - 10mg, swallowed
- Triazolam – in office, 1 hr. prior to beginning tx, 0.125 - 0.5 mg, sublingual
- Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Minimal Sedation Protocol #3:

up to 3 hrs on adults 18 and older (multiple drug use)

- Diazepam – night before, 0-10mg, swallowed
- Triazolam– in office, 1 hr. prior to beginning tx, 0.125 - 0.5mg, sublingual
- Hydroxyzine – in office, 1 hr. prior to beginning tx, 10 - 50mg, slurry drink
- Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Minimal Sedation Protocol #4: up to 4 hrs on pts. 12 yrs. and older

- Diazepam – night before, 0 - 10mg, swallowed
- Lorazepam – in office, 1 hr. prior to beginning tx, 1 - 3mg, sublingual
- Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Minimal Sedation Protocol #5: greater than 4 hrs on adults 18 yrs. and older, multiple drug use

- Diazepam – night before, 0-10mg, swallowed
- Lorazepam– in office, 1 hr. prior to beginning tx, 1 - 3mg, sublingual
- Hydroxyzine – in office, 1 hr. prior to beginning tx, 10 - 50mg, slurry drink
- Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Incremental Protocol #1

Diazepam – night before at bedtime 0 – 10mg, swallowed

Triazolam – 1 hr. prior to appointment
0.125 – 0.25mg, swallowed

Triazolam – At initial assessment and reassessment, 0.125 – 0.5mg, sublingual as needed

Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Incremental Protocol #2

Diazepam – night before at bedtime 0 – 10mg, swallowed

Triazolam – 1 hr. prior to appointment 0.125 – 0.25mg, swallowed

Hydroxyzine – At initial assessment 0 – 100mg swallowed

Triazolam – At initial assessment and reassessment 0 – 0.5mg, sublingual as needed

Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Incremental Protocol #3

Diazepam – night before at bedtime 0 – 10mg, swallowed

Lorazepam – 1 hr. prior to appt. 1 – 2mg, swallowed

Lorazepam – At initial assessment and reassessment 0 – 3mg, sublingual prn

Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

Incremental Protocol #4

Diazepam – night before at bedtime 0 – 10mg, swallowed

Lorazepam – 1 hr. prior to appointment 1 – 2mg, swallowed

Hydroxyzine – At initial assessment 0 – 100mg, swallowed

Lorazepam – At initial assessment and reassessment 0 – 3mg, sublingual

Nitrous – in office, during delivery of local, titrate to effect with appropriate protocol

OCS Challenges

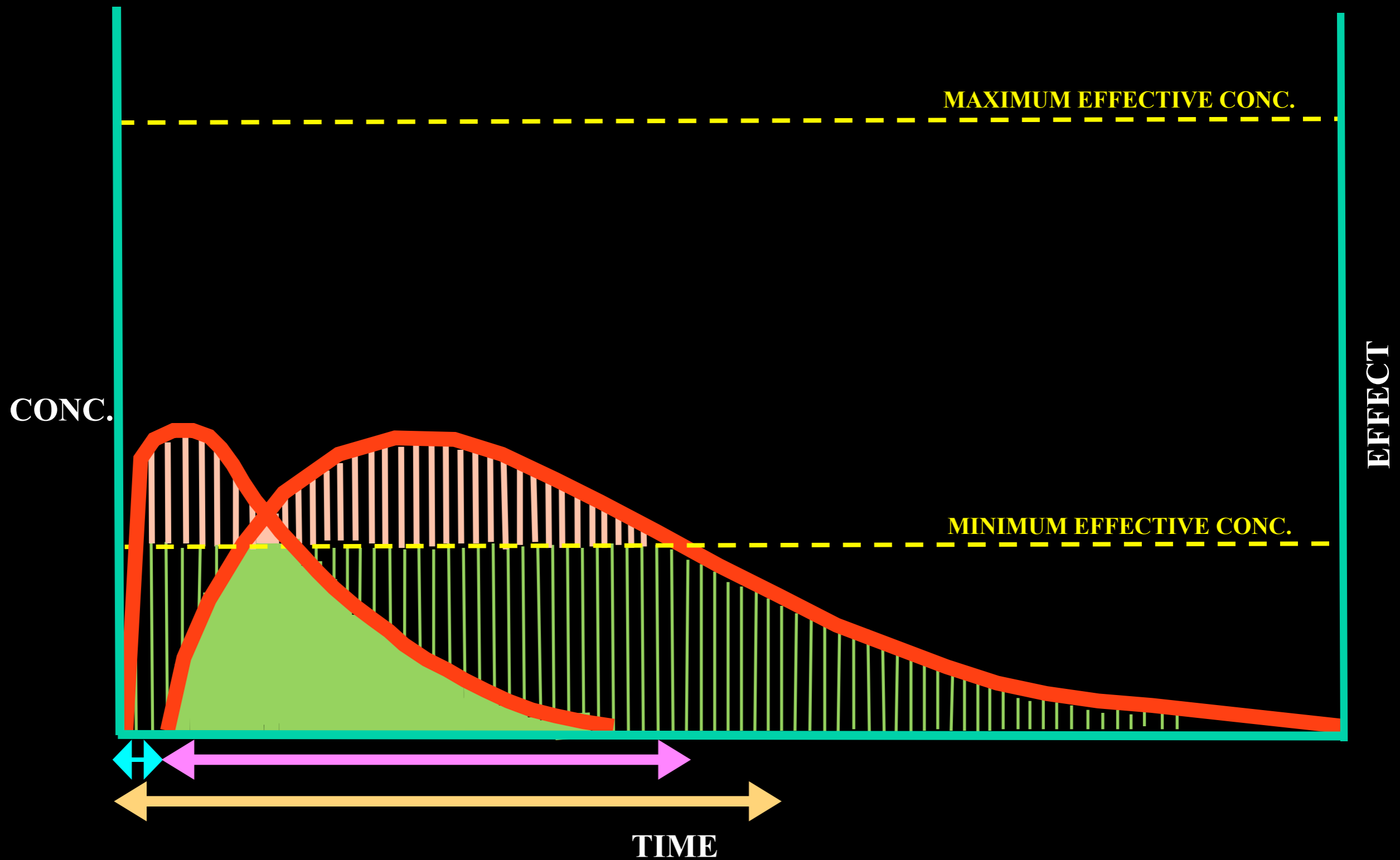
- **Titrate**
- **Onset Of Action**
- **Recovery Time**
- **Sedation/Analgesia**
- **The Hyporesponder**
- **Hypoglycemia**
- **Dehydration**

IV Sedation Protocols For The Outpatient Dental Setting

IVCS Challenges

- **Short Duration of Action**
 - **More frequent dosing**
 - **Inconvenient**
 - **More drug is administered**
- **Needle phobia**
 - **Patient & Dentist**

Time/Conc. Curve (Oral & IV)



Combination Oral/IV Protocols On Day Of Appointment

- **Prolong the duration of the sedation action intra-operatively and post-operatively**
 - **Reduce the amount and frequency of IV agent administered**
- **Reduce stress on the patient & IV administrator**
 - **Make IV access easier**

Pediatric Sedation

Non-Pharmacologic Methods

New treatment delivery methods and models

Intranasal Administration of Drugs in Special Populations

Outpatient Medical Centers

Anesthesia Team: Partnerships with other Medical Professionals

New standards for sedation for the second decade of the 21st century

1. Dentist more qualified in Pt. Assessment

1. More Medical Conditions

2. Aging Population

3. More Medications

2. More IV Sedation

1. Combination Ora/IV

2. More Regulations

New standards for sedation for the second decade of the 21st century

3. Monitoring

1. Capnography

2. EKG

4. Emergency Preparedness

1. ACLS

1. Specialized

1. Dental

2. Airway