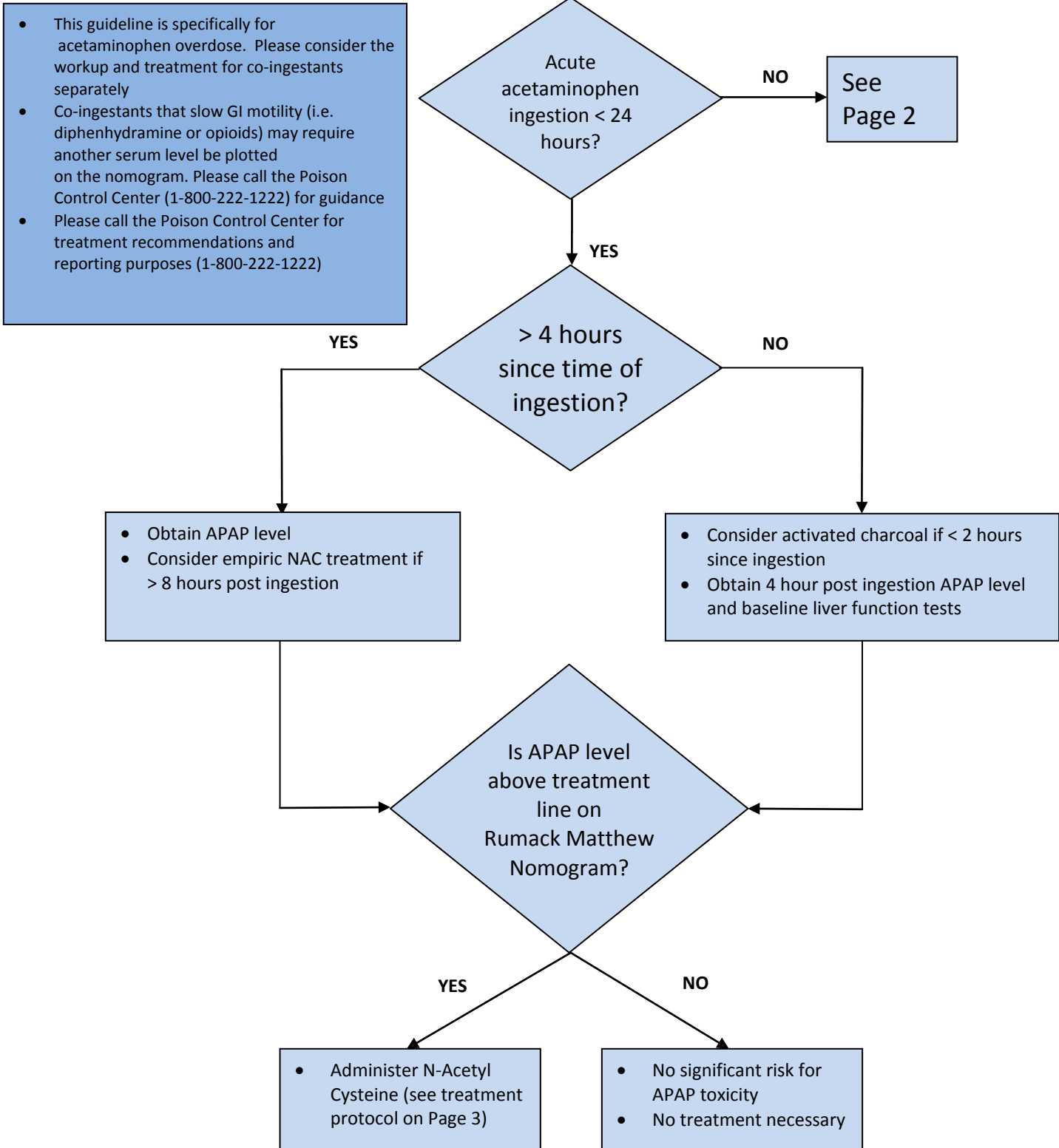
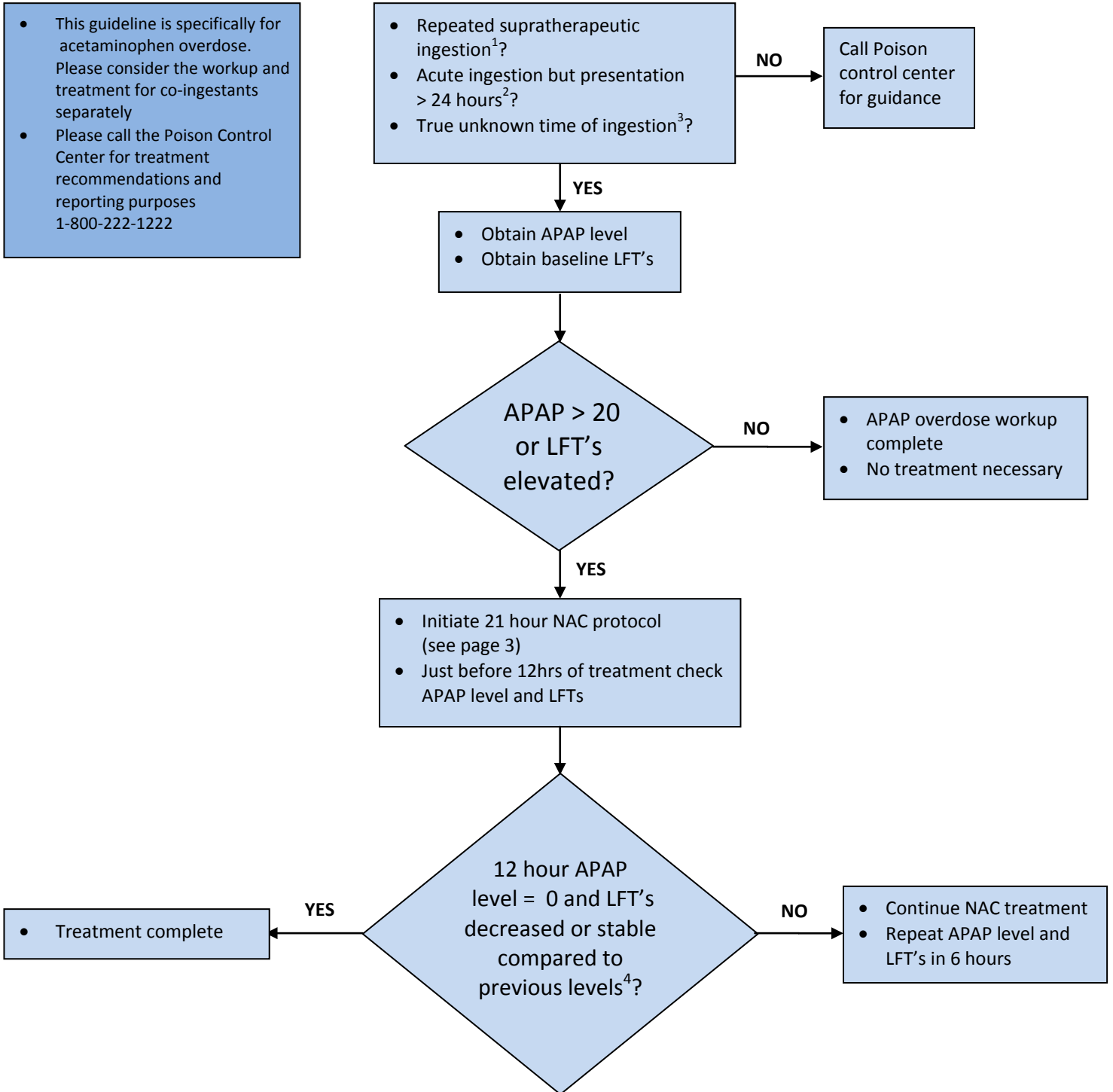


# Acute Acetaminophen Overdose



# Repeated Supratherapeutic or Unknown Time of Ingestion Acetaminophen Overdose



1. A repeated supratherapeutic ingestion is one that is greater than 4gm/24 hrs for greater than 24 hours. This usually occurs in the setting of accidental overdose during pain management for a condition such as dental or back pain.
2. An acute ingestion cannot be plotted on the Rumack Matthew Nomogram if greater than 24 hours post-ingestion.
3. A true unknown time of ingestion is one for which there is NO information about time of ingestion (found down, denial of ingestion but APAP on screen, etc.). EVERY effort should be made to assess for time of ingestion.
4. If LFT's were significantly high on presentation or other findings found consistent with hepatic failure, NAC may need to be continued, call Poison control center for guidance.

**21 Hour N-acetyl cysteine (NAC) Protocol**

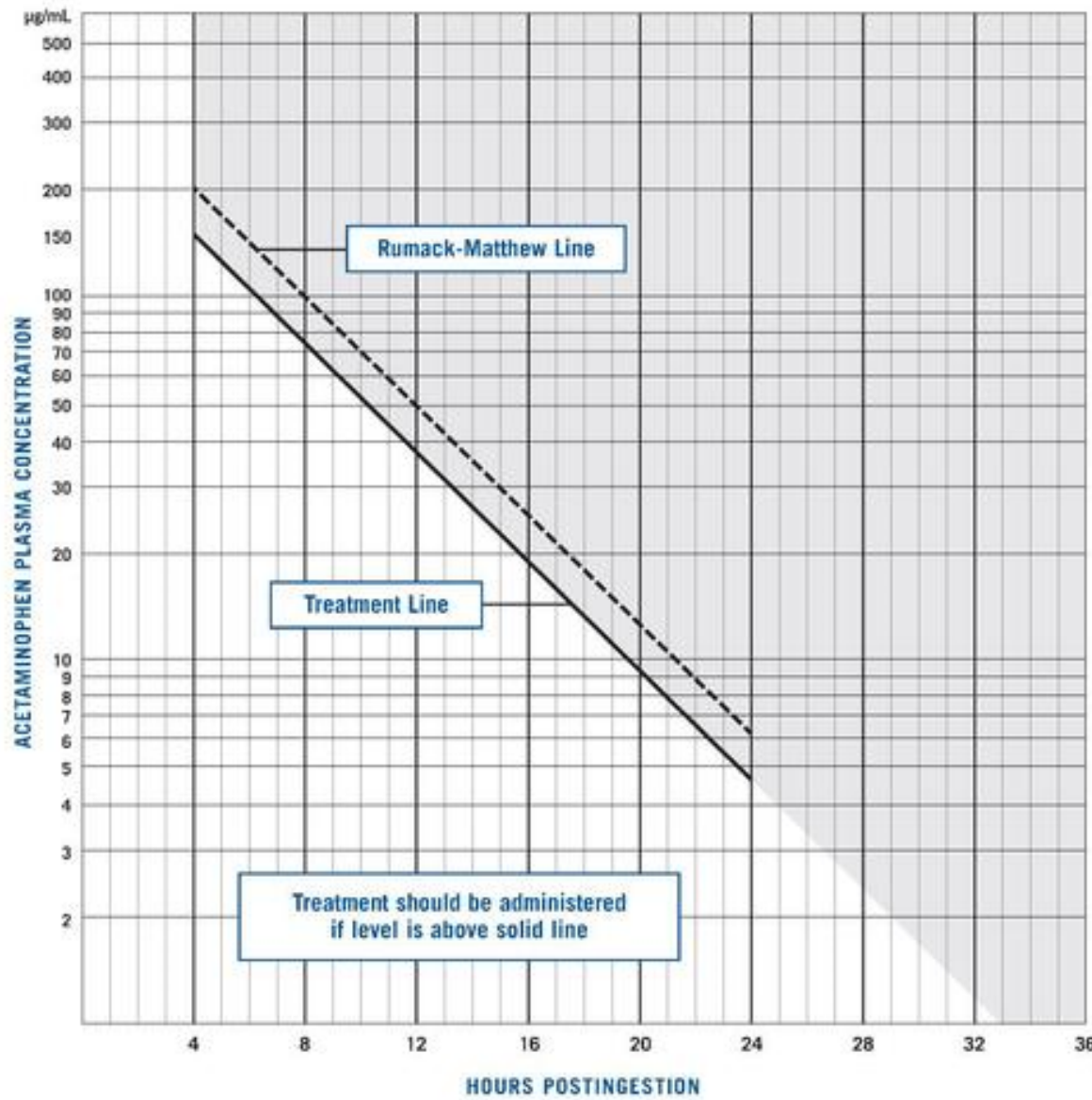
- 150 mg/kg IV NAC over 1 hour
- 50 mg/kg IV NAC over 4 hours
- 100 mg IV NAC over 16 hours

Recheck APAP level and LFTs with 4 hours remaining for acute ingestions, or at designated times on flowchart for non-acute ingestions. If APAP > 0 or LFTs increasing, continue NAC 100 mg/kg over 16 hours until the APAP is 0 and the LFTs are downward trending.

**Supratherapeutic Doses**

Adults: >4 g/day for >1 day  
 Children (<6 yo)  
 0-24 hours: >200 mg/kg/day  
 24-48 hours: >150 mg/kg/day  
 >48 hours: >100 mg/kg/day

**Single Acute Acetaminophen Overdose Nomogram**



**Nomogram:** acetaminophen plasma concentration vs time after acetaminophen ingestion (adapted with permission from Rumack and Matthew. *Pediatrics*, 1975;55:871-876). The nomogram has been developed to estimate the probability of whether a plasma acetaminophen concentration in relation to the interval post-ingestion will result in hepatotoxicity and, therefore, whether acetylcysteine therapy should be administered.

- CAUTIONS FOR USE OF THIS CHART:**
1. Time coordinates refer to time post-ingestion.
  2. Graph relates only to plasma concentrations following a single, acute overdose ingestion.
  3. The Treatment Line is plotted 25% below the Rumack-Matthew Line to allow for potential errors in plasma acetaminophen assays and estimated time from ingestion of an overdose (Rumack et al. *Arch Intern Med*. 1981;141(suppl):380-385).

# Guideline Evidence

Guideline Topic: Acetaminophen overdose

Author: Nik Collins, MD, Tammi Schaeffer, MD

Date of Creation: 7/1/14 Sugg Update: 7/1/2016

Search Criteria: Tylenol overdose, treatment

Databases: PubMed, Poisonsdex

Key Guidelines (Dates) McNeil Pharmaceuticals Guideline

#	Recommendation	Source	Classification	Level of Evidence
1	Obtain APAP level no less than 4 hours after ingestion	Douglas et al, Rumack et al	I	C
2	Consider activated charcoal if <2 hours since ingestion	Buckley et al, Levy et al	I	C
3	Treat with NAC if APAP level above R-M Nomogram	Rumack et al, Tsai et al, Smilkstein et al, Sivilotti et al	I	C
4	No treatment necessary for APAP level below R-M nomogram threshold	Rumack et al, Tsai et al, Smilkstein et al, Sivilotti et al	II	C
5	APAP level and baseline LFTs if RSTI, ingestion >24h ago, true unknown time of ingestion	Daly et al, Watkins et al	I	B
6	Treat with 21 hour NAC protocol if APAP >20, LFTs elevated	Daly et al, Watkins et al	I	B
7	No treatment necessary for APAP level <20 and normal LFTs	Daly et al, Watkins et al	II	B
8	Cease treatment if APAP level = 0 and LFTs decreased or stable after 12 hours of treatment	Sivilotti et al, Bond et al	II	C
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#	Recommendation	Source	Classification	Level of Evidence
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**Rumack BH, Matthew H.**

Pediatrics. 1975 Jun;55(6):871-6

Recommendation      Lit  
 First level at 4 hours