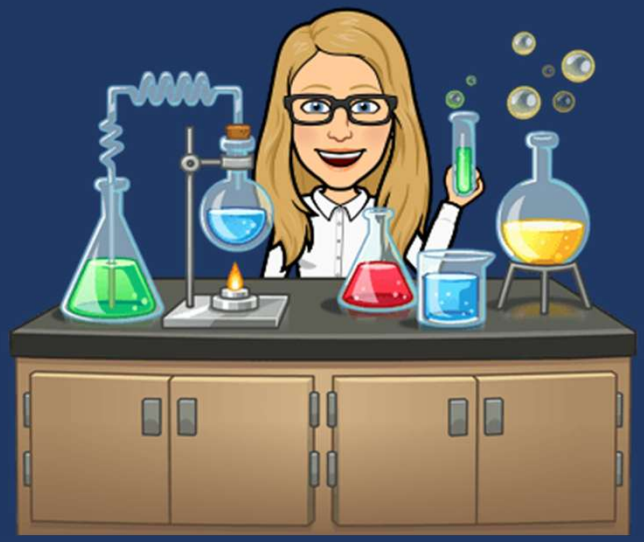
For clicker question voting, go to:
https://pollev.com/lauriestarke263



Dr. Laurie S. Starkey

Cal Poly Pomona

CHM 3150 Organic Chemistry II
Announcements 12/2/25

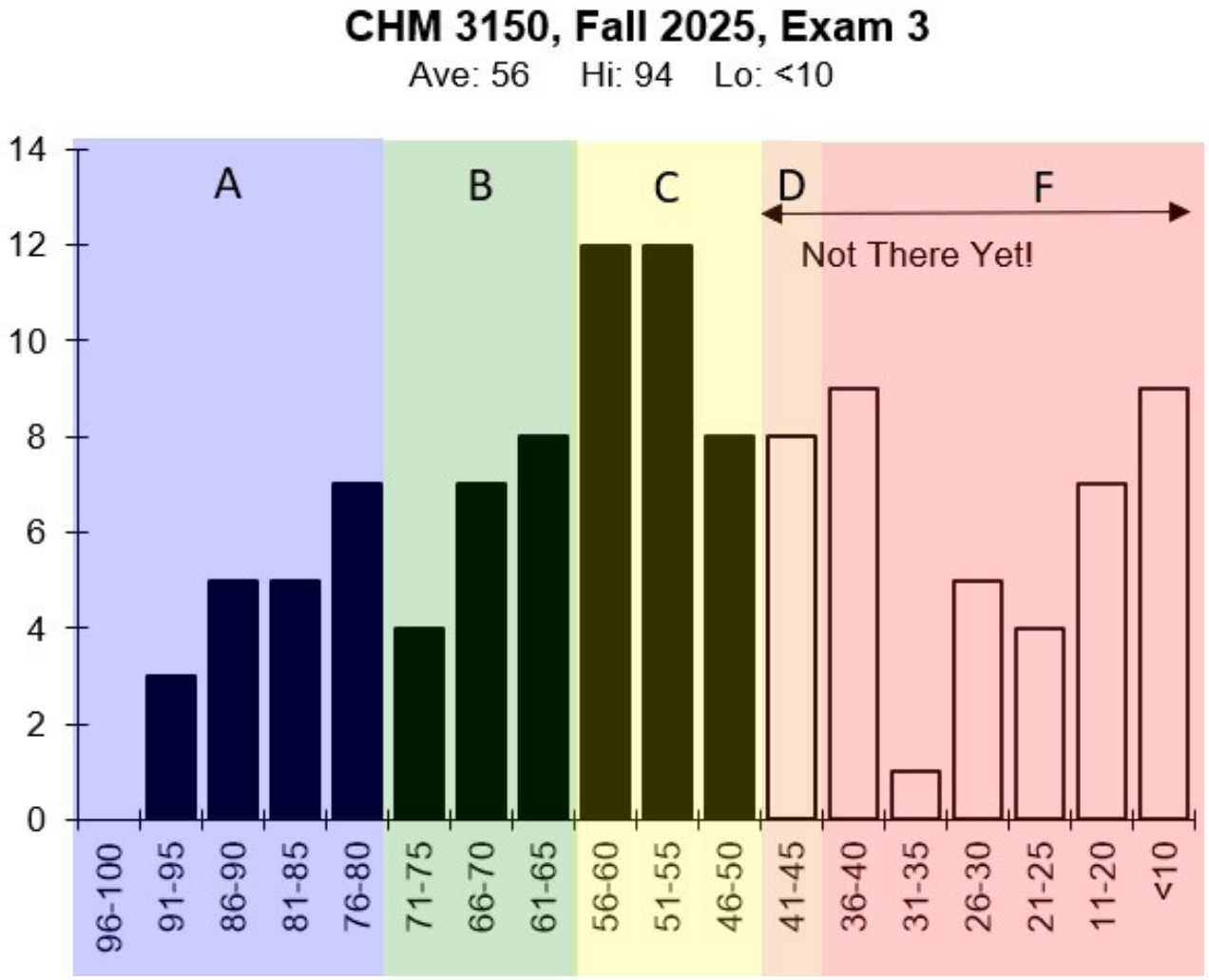
Exam III Results

A/B/C… ranges are to give you a rough idea of course grade (assuming full homework credit) **based only on this exam score.**

Note: lowest midterm score will be dropped!

Also, the **final exam** will be weighted double if that helps your grade

75 + 75 + **150** = 300 points



Today's Topic: Chapter 16
Conjugated Dienes (Diels Alder)

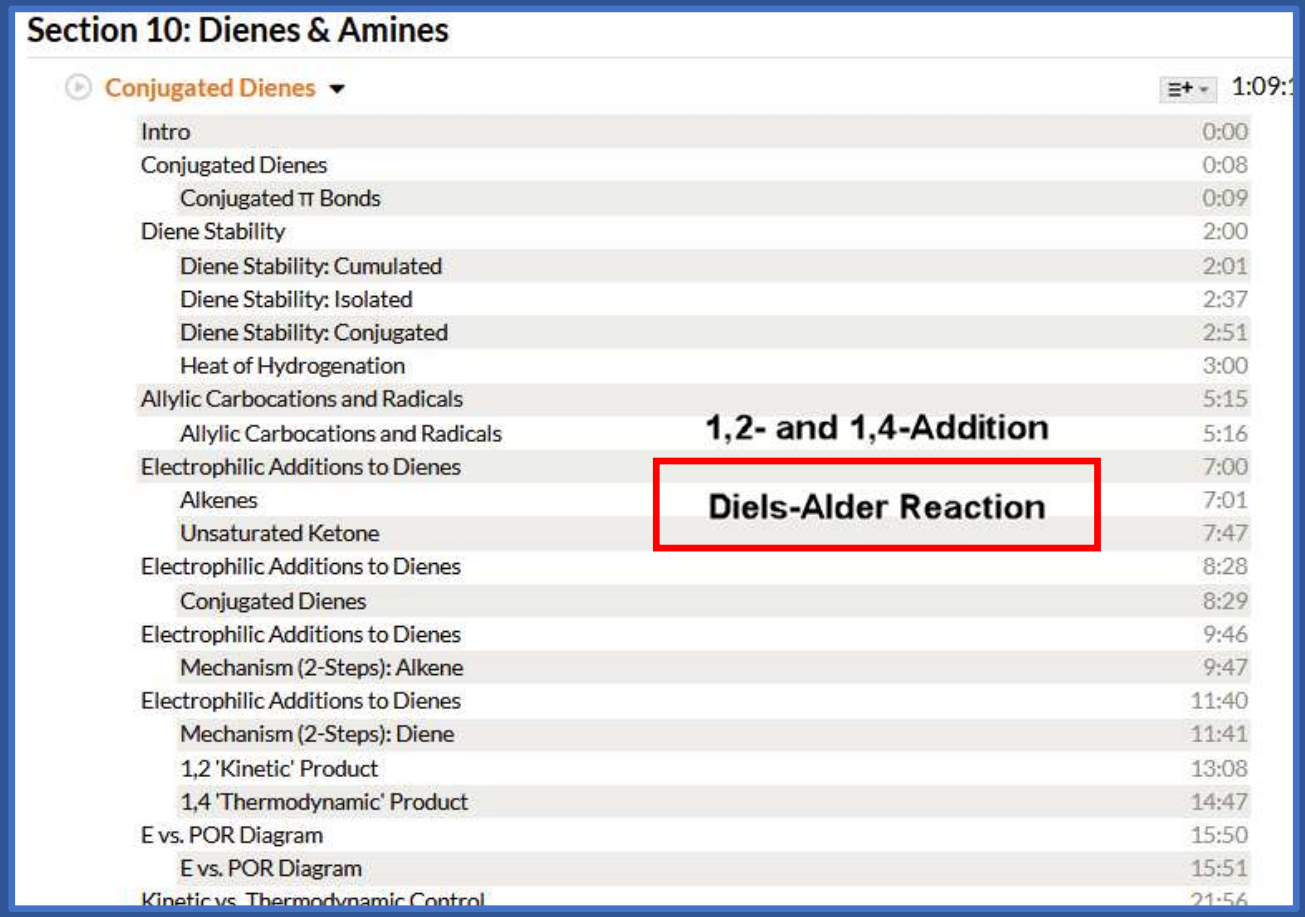
Step 2

- Read Klein 16.7 **Diels-Alder Reaction**
- Watch flipped lecture
- Work through **SkillBuilder 16.3** (problems 21.14 - 21.28)
- Suggested textbook problems: 1–67 (skip 5, 19-28, 41, 47-56, 59, 60c, 65)
- **Diels-Alder homework** (submit to Gradescope) and answer key

Conjugated Dienes - Part 2
43 minutes
skeleton notes pages 16-4 to 16-8

Ch. 16 (Step 2)
- ✓ **Watch**
- ✓ **Read**
- ✓ **Practice**

Flipped Lecture: Conjugated Dienes



Section 10: Dienes & Amines

Conjugated Dienes 1:09:1

Intro	0:00
Conjugated Dienes	0:08
Conjugated π Bonds	0:09
Diene Stability	2:00
Diene Stability: Cumulated	2:01
Diene Stability: Isolated	2:37
Diene Stability: Conjugated	2:51
Heat of Hydrogenation	3:00
Allylic Carbocations and Radicals	5:15
Allylic Carbocations and Radicals	5:16
Electrophilic Additions to Dienes	7:00
Alkenes	7:01
Unsaturated Ketone	7:47
Electrophilic Additions to Dienes	8:28
Conjugated Dienes	8:29
Electrophilic Additions to Dienes	9:46
Mechanism (2-Steps): Alkene	9:47
Electrophilic Additions to Dienes	11:40
Mechanism (2-Steps): Diene	11:41
1,2 'Kinetic' Product	13:08
1,4 'Thermodynamic' Product	14:47
E vs. POR Diagram	15:50
E vs. POR Diagram	15:51
Kinetic vs. Thermodynamic Control	21:56

1,2- and 1,4-Addition

Diels-Alder Reaction

Friday5 Nanotechnology Articles – WOW!

Week 15

Tu: WorksheetCh16-2 | 411

Nanotech Wiki: 2025 & 2024

Th: WorksheetCh22

Nanotechnology in Animal Production (Nicole Proar

Nanotechnology has made its way through many fields
field. More specifically nanoparticles have been used ir
livestock production, helping decrease antibiotic-resists
preserve food stuffs, as well as simple medical help in
been very innovative in helping discover different proce
within the animal science field and only continues to im

Nanotubes in daily life (Madelyn Kushida)
Nanotubes are extremely important with nanomaterials and
aircraft equipment which helps reduce the weight and allow
Nanotubes are stronger than steel
used to destroy breast cancer tum
at faster rates which are used in wi
nanotubes which both share differ
production of bulletproof vests.

Nanotechnology in Nano-Drug del
When looking at modern medicati
reach certain areas that we desire
Therefore, people must take more
Drug delivery we could release a st
reference to the article, with havin
goes on to talk about a device kno
chemical shifts in the body (PH), th
and is slowly released in the blood

- **Nanoparticles as probe**

Nanoprobes can be used to incre
Instead of simple contrast being
roll of highlighter as well as rela
resolution. The flexibility of nar
systems can cut the need for me
procedures to solve a single problem, instead allowing t
it all in a single environment.

Role of Tunneling Nanotubes in the Nervous System

Tunneling nanotubes have the potential to enhance cell
the nervous system. Tunneling nanotubes can be regula
other necessary drug to precise locations. The intended

- **Nanotechnology in cancer diagnosis: progress, challe**
(Quangtriet Duong): Scientist have been experimenti
fight against cancer. One of the main features nanotec
targeting specific proteins, DNA, RNA, etc. that play a
addition, nanotech can also detect when a cancer cell
researchers and scientists to discover characteristics o
stages of development of cancer.
- Cancer nanotechnology: application of nanotechnology in
(cpp.edu) (Bianca Vazquez): More effective cancer treatme
use of nanotechnology. With this, it provides an ideal way t
causing severe damage to the normal ones. When using na
standpoint, it is called nanomedicine. Recently, there has b

level. Nanorobots can aid in cellular repairs that the human hands can reach. Nanotechnology will better help livestock and pet health and reproduction as research grows.

- **Nanotechnology meets Solar Technology (Shayley Padilla):** As the push for environmentally friendly energy sources increases, there is an urgency to find efficient and reliable methods - a major one in today's age being solar power harnessing. As solar panel technology continues to grow, there is a big problem when it comes to the high prices and complexity, and efficiency can be a part of this problem. However, within the past decade more research has been done to discover that nanotechnology can improve the efficiency of light absorption in the silicon-based solar cells by altering their nanomaterial in order to enhance the electrical properties. Nanotechnology aids in efficiency boost through light scattering properties so that less light is

Fullerenes, Nanotubes and Nanotechnology

This is a place to share something interesting you have nanotubes in particular, or nanotechnology in general. and summarize your findings in just a few sentences li cite your source so we can follow up to learn more (hig add a Link, or use the Insert tab above to find the Link t FridayFive to get credit for your submission.

For an introduction, you can read **"Nanotechnology's**

- **Buckyball Film Cameo (Dr. Starkey):** When I was in were working on a documentary on the discovery o They wanted some "SoCal-looking" people for an op haired, blue-eyed chemistry grad students. (We all southern California, right? The real joke is that ALL ha!) Anyway, we all put on some buckyball t-shirts their intro to "Race to Catch a Buckyball" which aire
- Nano on Materials (Andrea Lopez): Through the dis to create bandages, socks, and antimicrobial hand w be seen/active in UV sunscreens to protect the radi much stronger than steel but very effective in terms them for other purposes. With such examples of na scientists can make huge advancements in using thi
- **Nano Drug Delivery (Dominic Lopez):** A new revolu because in the typical method of the patient swallo place and does not do so in high enough concentrat the drug frequently to see the benefits. Tejal Desai capable of delivering glucose into the body steadily channels and by using pores as small as 7 nanomete

icles and Their Colors (Kiana Robinson):
that allows them to appear in different col
as well as the interaction between photo
as size decreases, tons emit energy, and
changing the color. https://books.google.
vP8tp&dq=nanotechnology%20drug%20d

Carbon Nanotubes in Medicine (Joshua R
s in medicine are mainly drug, biomolecul
gans. If we just look at how they deliver d
cytoplasmic membrane without causing
se of that this type of nanotechnology has
ore effective way of drug delivery than wi

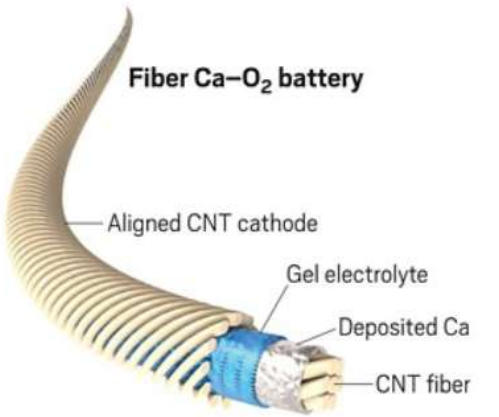
nology in Veterinary Medicine (Sarah
y medicine field is still experimental in
se atypical diseases and revolutionize
tion field, nanoparticle technology is v
gy can help provide new tools in the w
notube form to

anoparticles can
ancer cells using
an deliver drugs
on a molecular

the brain.
- Nanotechn
developme
nano-robot
Houston an
light. This n
https://www
- **Nanotechn**
investigate
medical equ
microscope
procedures
- **Disease Pre**
about anim
example of a polymeric nano particle that can be used to bind a certain bacteria,

POWER FABRIC

Researchers wove a fiber version (top) of a new long-lasting calcium-oxygen battery into fabrics (white lines, bottom). They used the woven battery to power a mobile phone. CNT: carbon nanotubes.



Credit: *Nature*

FOOD SCIENCE

icles gauge iness

C&E News
11/7/22

have found that whiskey's flavor
distinctively colored nanoparticles,
's maturity (*ACS Appl. Nano Mater.*
ster blenders currently sample casks

iskey samples from around the rld await testing using a simple dition of gold salts.

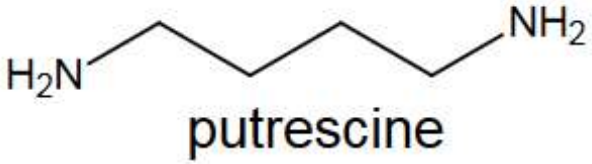
ounds in the sample. The researchers nd a whiskey a clearer idea of which YAL DHAR, special to C&EN

oparticles that are used in mRNA vaccines. -LSS)

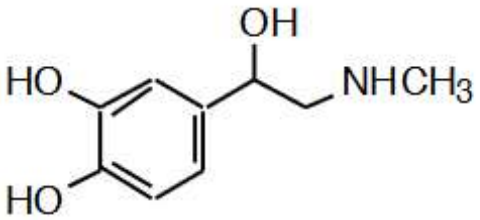
lizing Nanoballs in Medicine (Joshua Gonzalez): Specific types of nanoballs known as ckyballs, have started to revolutionize a new way for medicine. These Buckyballs have n modified to be able and trap any free radicals created when having an allergic ction. Furthermore, after trapping theses free radicals the Buckyballs serve by cking the inflammation that was created from the allergic reaction. Buckyballs, also own as fullerene, are a very helpful nanotechnology made up of 60 carbons in a shape of a soccer ball. Another form this nanotechnology can be useful in medicine is by

Up next: Interesting Amines

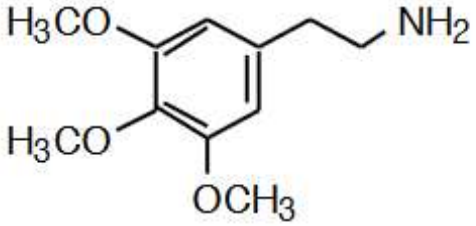
cadaverine



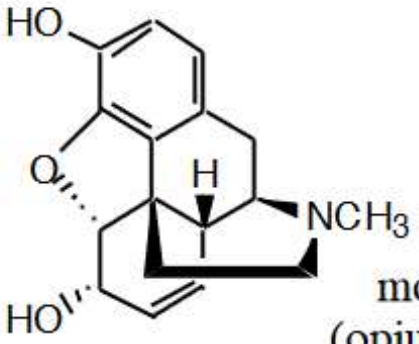
putrescine



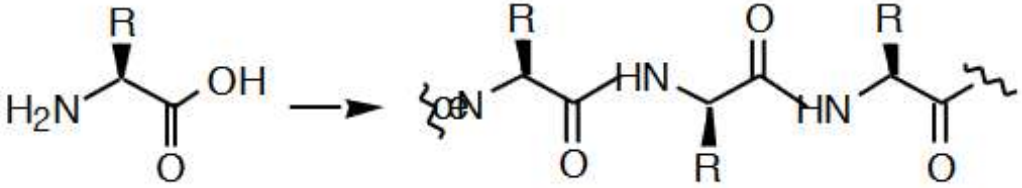
adrenaline
(hormone)



mescaline
(peyote alkaloid)

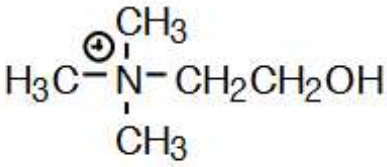


morphine
(opium alkaloid)

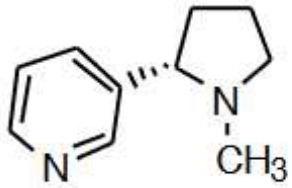


amino acids

protein

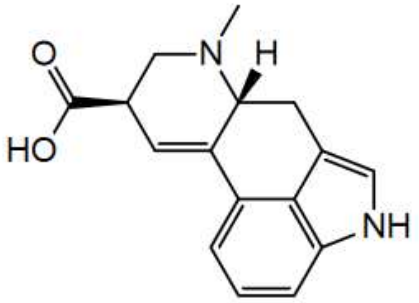


choline
(nerve impulse)

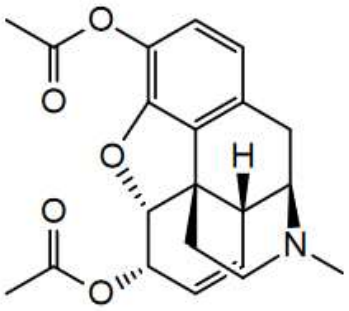


nicotine

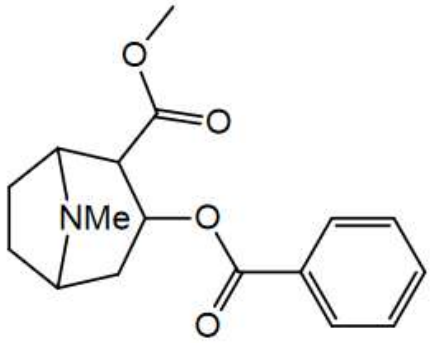
More Interesting Amines



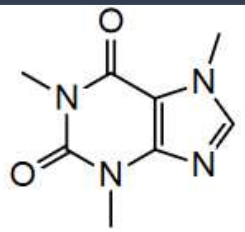
lysergic acid (LSD)



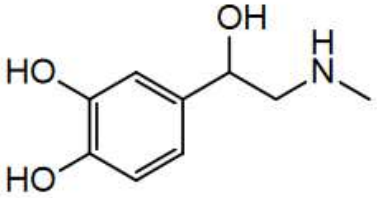
heroin



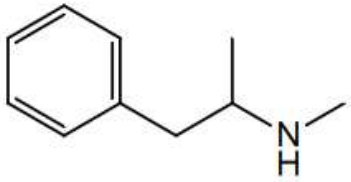
cocaine



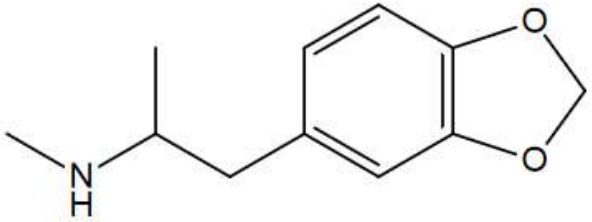
caffeine



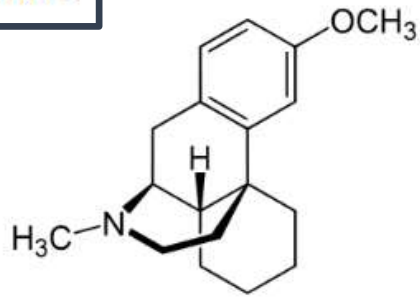
adrenaline



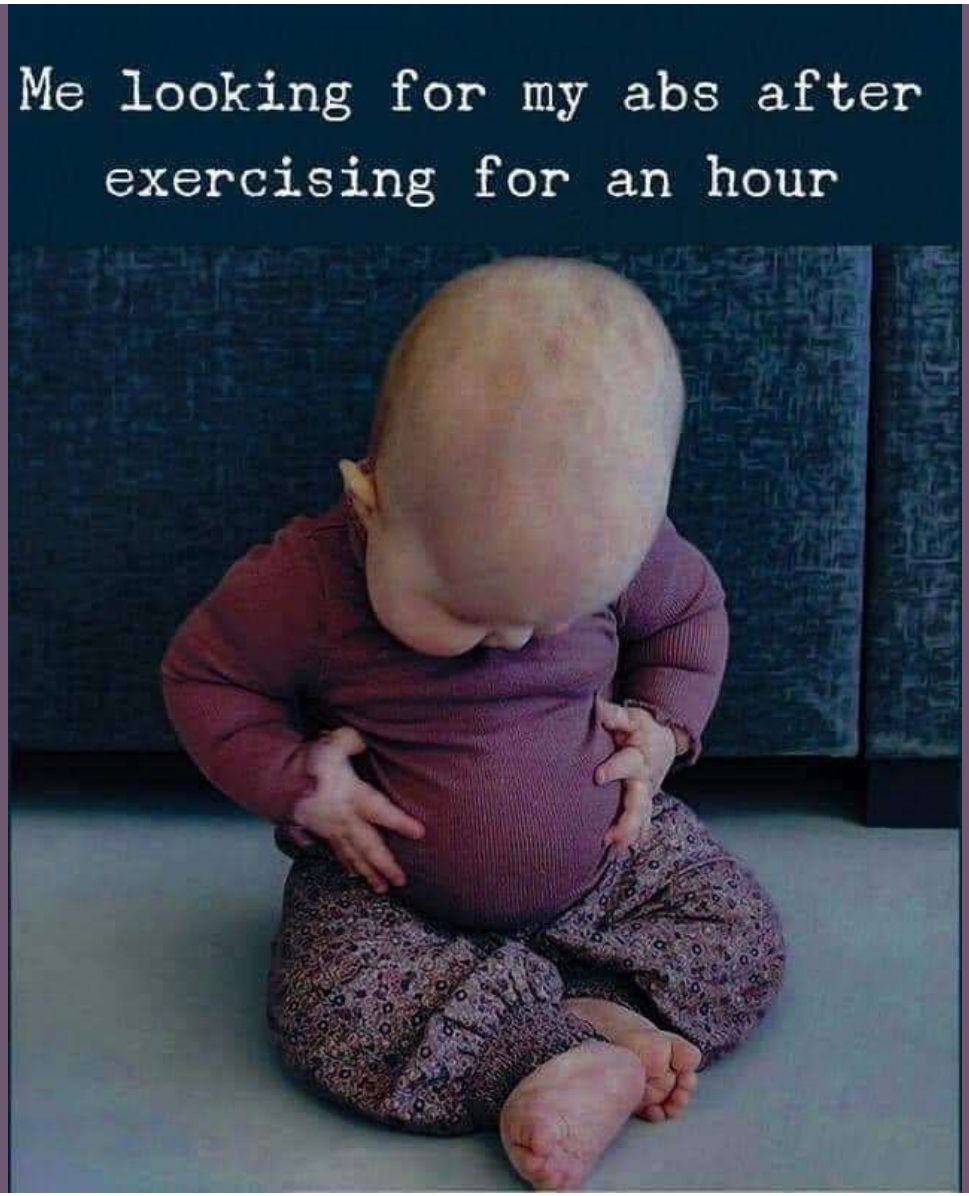
methamphetamine



3,4-**M**ethylene**D**ioxy**M**eth**A**mphetamine



dextromethorphan



Holiday feasts and exercise… everything in moderation!