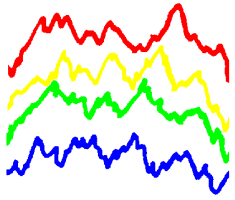


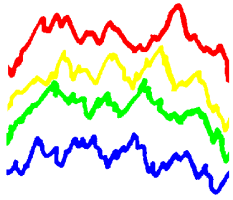
Ketogenic diet: only for kids?

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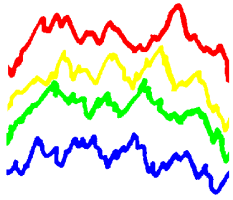


Barborka CJ

Arch Neurol 1930;6:904-914

Monotherapy 100 adults

- 12% seizure free
- 44% definite improvement
- 44% no benefit at 1 year follow-up

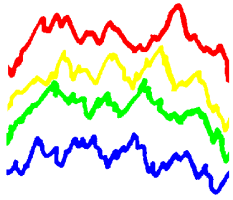


Sirven J et al.

Epilepsia 1999;40:1721-1726

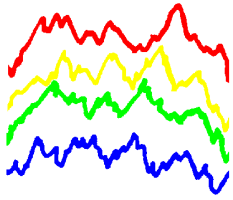
11 adult patients on ketogenic diet 4:1
ratio, fluid restriction

- 3 had a 90% reduction of seizure frequency
- 3 had a 50-89% reduction of seizure frequency
- 1 had a <50% reduction of seizure frequency
- 4 discontinued the diet



Ketogenic diet: Side effects in adults

- Constipation
- Cessation of menses
- Weight loss
- Clear mentation and increased alertness
- Increase in cholesterol, triglycerides, and LDL
- Increase in HDL, but increase in cholesterol/HDL



Ketogenic diet: Why not in adults?

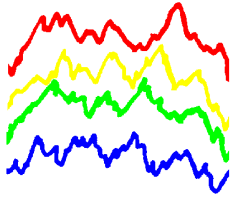
- Problems with maintaining ketosis?
- Compliance
- Serious medical complications

Consequences of atherosclerosis

Consequences of decreased bone density

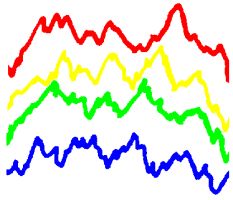
Lethargy due to ketosis

Urinary stones



Own experience with ketogenic diet in adults

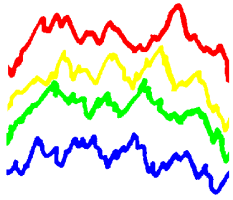
$N=2$



Modified diet – also for adults

Kossoff EH et al. *Epilepsia* 49(2):316-319, 2008

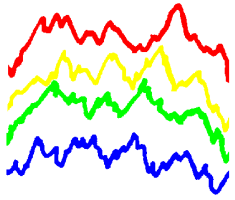
- 30 adult patients with weekly seizures
- Diet for 6 months:
 - Carbohydrates 15 g/day
 - Fat food intake encouraged
 - Fluids and calories ad libitum
 - Multivitamin and calcium supplement



Kossoff EH et al. Epilepsia 49(2):316-319, 2008

Seizure reduction

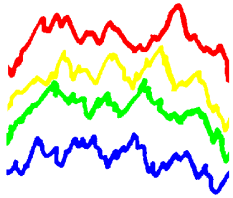
	0%	1-50%	51-75%	76-99%	100%
1 month	15 (50%)	1 (3%)	10 (33%)	4 (14%)	0 (0%)
3 months	14 (47%)	2 (6%)	7 (24%)	6 (20%)	1 (3%)
6 months	15 (50%)	5 (17%)	6 (20%)	3 (10%)	1 (3%)



Kossoff EH et al. Epilepsia 49(2):316-319, 2008

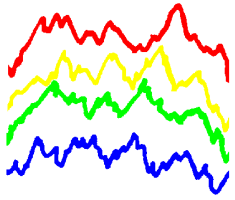
Other significant effects

- Ketosis in all 28 patients
- Carbohydrate intake 20.0 g per day (aim 15)
- Weight loss (80.2 to 73.4 kg), BMI from 28.3 to 26.4
- Increase in urine calcium to creatinine ratio
- Increase in blood urea nitrogen
- Increase in total cholesterol



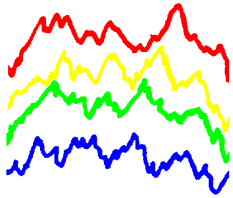
Advantages of modified diet

- No need for admission
- No fasting period
- Rapid initiation
- No weighing of food
- No restriction of fluid, calorie or protein intake
- No financial barriers



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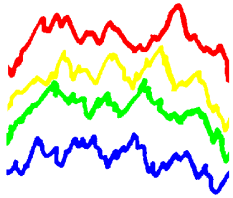


Own protocol for modified diet

- Medically refractory epilepsy
- Consultation with neurologist in the out-patient clinic
- Blood tests
- Consultation with dietician and nurse
- Diet with 10 g of carbohydrates per day

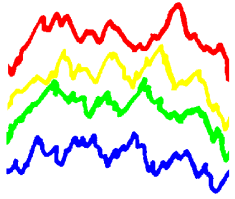
No further limitations

Fat intake encouraged



Own protocol for modified diet

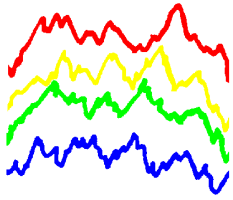
- Initiation of diet
 - Measurement of ketone bodies in urine and blood
 - Recording of diet
- Consultation with the neurologist after 3 and 6 months
 - Seizure frequency
 - General medical condition
 - Ketone bodies in blood



Own experience with adults on modified diet

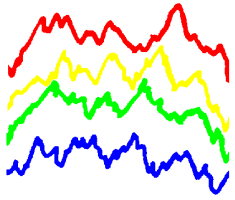
N=2

More on the way



Conclusions

- Classical ketogenic diet is a possibility in adults with medically refractory epilepsy
- Modified diet in adults seems to be an attractive alternative which needs further study
- Ongoing study of modified diet in Dianalund
- Refer patients to the Danish Epilepsy Centre in Dianalund



Dianalund

