

NIJZ Nacionalni inštitut za javno zdravje

ZDRAVA ŠOLA

## SARS-CoV-2 in debelost ali kaj je kura in kaj je jajce?

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Ljubljana, 10. junij 2021

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### Kratek pregled vsebine:

- Prehransko programiranje
- Načela zdrave in uravnotežene prehrane
- Hranilno revna in hranilno bogata živila
- Prehrana otrok v vrtcih in šolah
- Zaključki

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## Epigenetika

Preučuje vpliv dejavnikov okolja ...

Figure 1. Epigenetic modifications induced by nutrition, hyperglycemia, smoking, radiation, psychological stress, alcohol consumption, etc. can lead to range of long-term metabolic disorders in offspring.  
... na izražanje genov, in na kakšen način vplivajo na naše potomce.

EPIGENETICS  
2019, VOL. 14, NO. 3, 215-235  
<https://doi.org/10.1080/15592294.2019.1582277>

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Schagdasurengin et al., Nature Rev., 2016; Ferguson et al., Circ Cardiovasc Genet, 2016

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(Passarino et al., Immun Ageing, 2016)

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### „Si to, kar ješ oz. kar ti dajo jesti“

(Kamakura, Nature, 2011; Cridge et al., Nutrients, 2015)

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### Prehrana v prvih 1000+ dneh ...



„Prehransko ali presnovno programiranje“  
(Moore, et al., 2016)

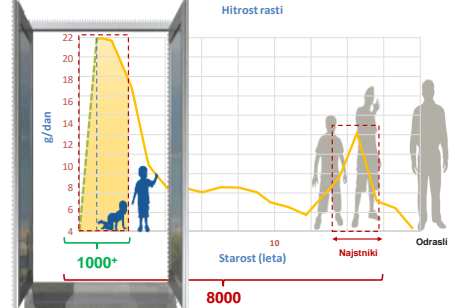
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### ZAKAJ JE PRAV PRVIH 1000+ DNI TAKO POMEMBNIH?

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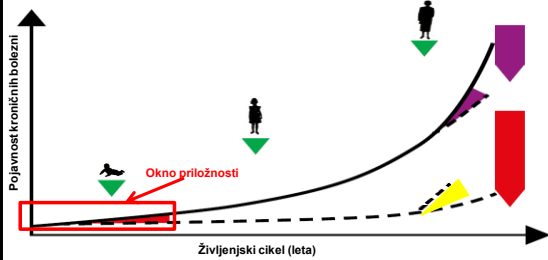
### Čas pospešene rasti



(WHO Growth Standards, 2006; Martorell, Am J Hum Biol, 2017)

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### Največji vpliv na poznejše zdravje



Koletzko et al., Ann Nutr Metab, 2017; Godfrey et al., Nestle Nutr Inst Workshop, 2016

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### First 1000 Day Nutrition Matters

The Physiological Implications of Nutrition

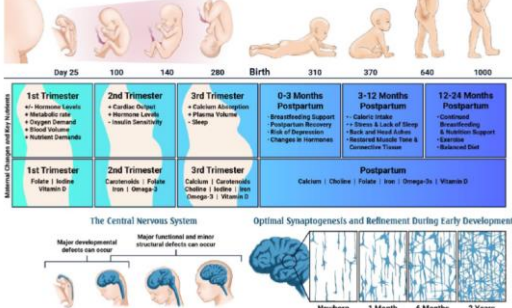


Figure 2. Why Nutrition Matters: a timeline of critical events during pregnancy and early development, and the role of nutrition. *Nutrients* 2019, 11, 2891

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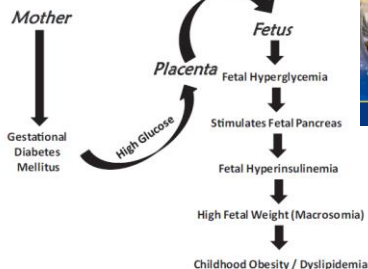


FIGURE 11.1 Gestational diabetes and fetal health outcomes. Gestational diabetes can program the fetus for hyperinsulinemia, which will eventually lead to macrosomia and childhood obesity.

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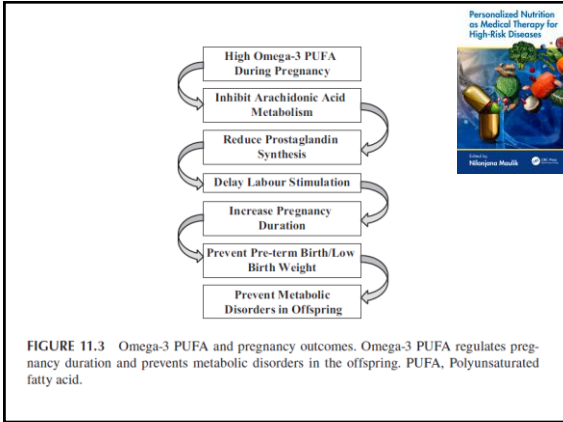
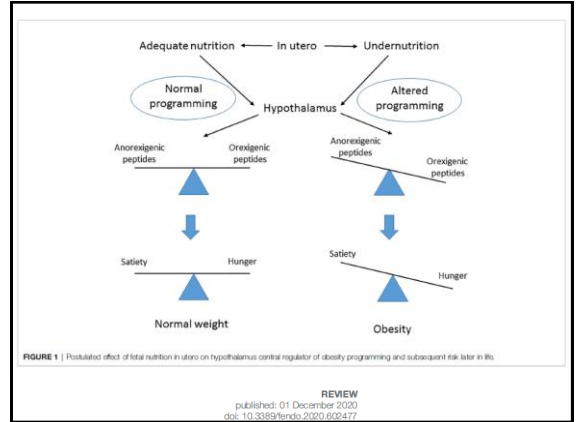


FIGURE 11.3 Omega-3 PUFA and pregnancy outcomes. Omega-3 PUFA regulates pregnancy duration and prevents metabolic disorders in the offspring. PUFA, Polyunsaturated fatty acid.

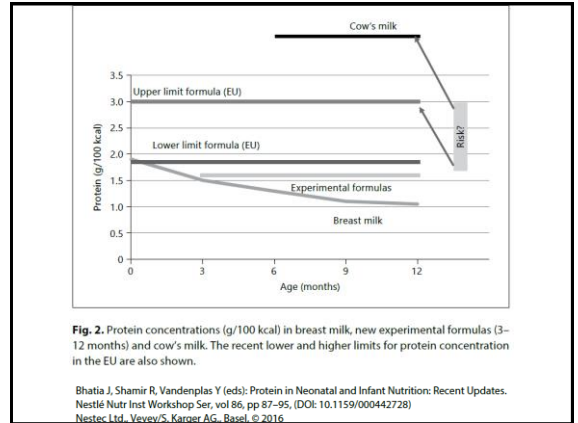
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Otroci manj izbircni pri uvajanju hrane,  
 če mama že med nosečnostjo in med dojenjem uživa  
 pestro in hranilno bogato hrano!  
 (Lam, Front Pediatr, 2015)

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CHILDHOOD OBESITY - AN OBESITY MONTH  
 CHILDREN WHO DRINK SUGARY BEVERAGES ARE LESS LIKELY TO DRINK WATER...  
 OBESITY IMPACTS 1 in 5 CHILDREN  
 YOU CAN HELP US PREVENT CHILDHOOD OBESITY.

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## Količina „popitega“ sladkorja na leto (2009/2010)

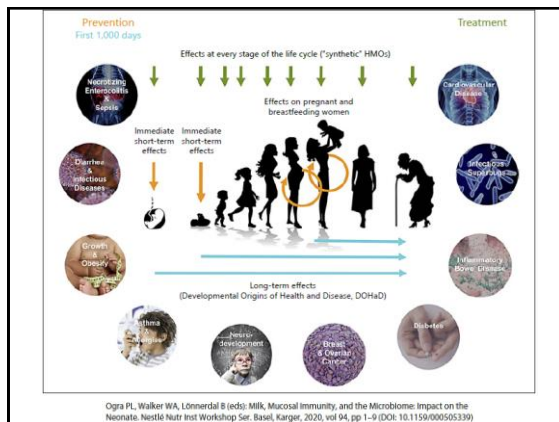


25 kg sladkorja/leto

### Ukrepi:

- vrtci/šole
- osveščanje

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International Journal of Environmental Research and Public Health

MDPI

Opinion

### Nutrition in the First 1000 Days: Ten Practices to Minimize Obesity Emerging from Published Science

Table 1. Summary of ten good practices to help prevent/ combat pediatric obesity.

Practice	List	Reference
Practice 1	Both mother and father nutritional behavior matter	[6,12–33]
Practice 2	Systematize body composition measurements to monitor growth	[34–41]
Practice 3	Exclusive breastfeeding for the best start in life	[42–48]
Practice 4	Window to introduce complementary feeding	[49,50,52–55]
Practice 5	Fruits and vegetables liking begins early	[7–9,12,32,49,52,56–60]
Practice 6	Respect the child appetite	[56,61–63]
Practice 7	Limit animal protein intake	[64–67]
Practice 8	Promote qualitative and adequate fat intake	[68–74]
Practice 9	Parents be a role model	[56–58,77–79]
Practice 10	Promoting physical activity and good sleep	[80–85]

Int. J. Environ. Res. Public Health 2017, 14, 1491; doi:10.3390/ijerph14121491

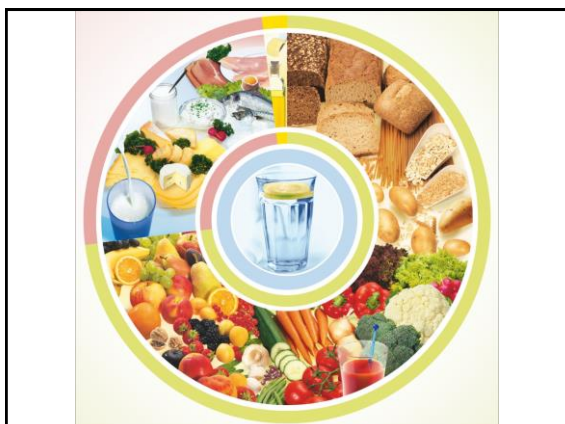
www.mdpi.com/journal/ijerph

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## Ukrepanje

- **izobraževanje staršev in otrok** o zdravi prehrani in zdravih prehranskih navadah
- definirati **primerno število in velikost obrokov**
- vzpostaviti **redne, enakomerno razporejene** obroke čez dan
- upočasniti **hitrost** uživanja hrane
- **omejiti vnos sladkorjev/mašob** (živila z nizkim GI)
- **starši naj bodo vzorniki in motivatorji**
- spodbujanje k **rednim telesnim dejavnostim**
- **omejiti čas**, ki ga otrok preživi pred TV, računalnikom, tablico
- starši naj **ne uporabljajo hrane za nagrajevanje/kaznovanje** otroka
- vključitev družine v **center za krepitev zdravja**

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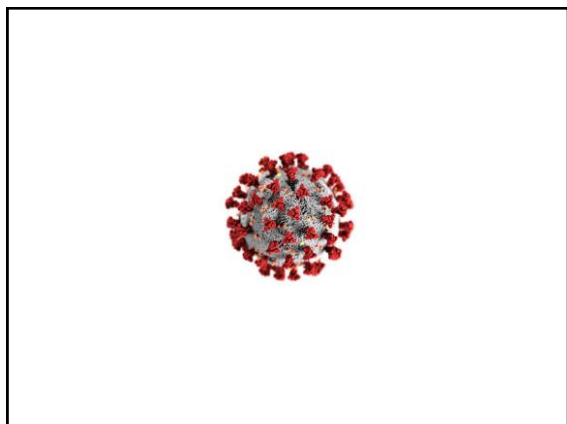


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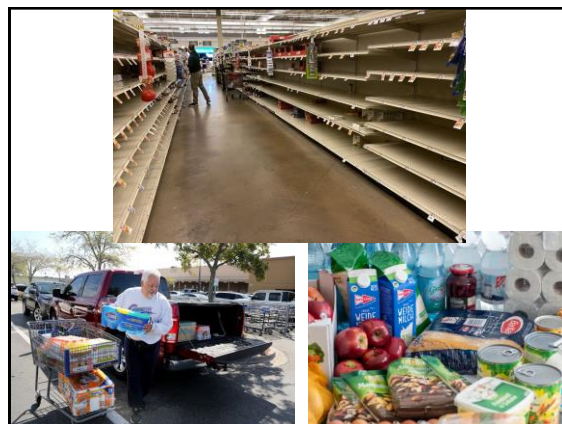
## Kaj pa v primeru medicinsko indicirane ali medicinsko ne-indicirane diete?

Bolj kot se omejuje nabor živil večje je tveganje za pomanjkanje hranil!

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**How to snack less while in lockdown**

Drink more water or herbal tea	Distract yourself with a game or call a friend	Do some quick exercise; at home or outside
Plan to cook proper meals and take time to enjoy	Plan your shop and don't stock unhealthy foods	Know your cravings and prepare healthy snacks

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**NIJZ** Nacionalni inštitut za javno zdravje

**DOBER TEK** Slovenija

**Prehranski nasveti**  
namenjeni posameznikom in družinam  
**v času nove virusne bolezni COVID-19**

Ljubljana, 2020

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**2** **Nakup** hrane in surovin načrtujte preudarno in dolgoročno

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**5** Izkoristite priložnost za pripravo **zdravih obrokov**

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**6** Izkoristite priložnost in se oskrbite **z lokalno hrano**



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**7** Kljub omejenim možnostim **ohranite priporočeno prehrano in telesno maso**



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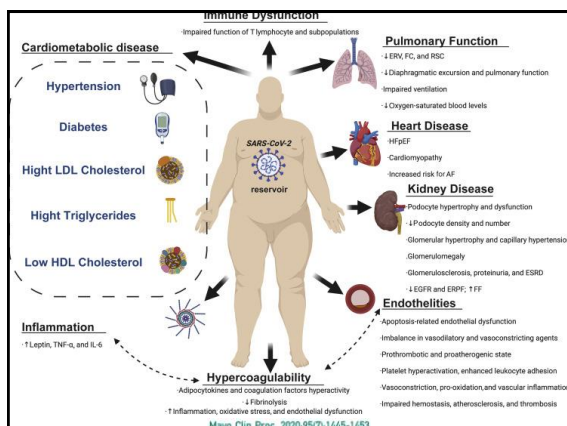
Posamezniki, ki so čezmerno hranjeni ali debeli ter tisti ki imajo povišan krvni tlak ali sladkorno bolezen imajo dokazano večje tveganje za zaplete ob prebolevanju okužbe z virusom SARS-CoV-2, enako pa je s podhranjenimi posamezniki.

Shujševalne diete so sicer v tem času odsvetovane, saj lahko oslabijo naš imunski sistem, je pa sedaj idealen čas, da se pričnemo prehranjevati uravnoteženo (v kolikor se do sedaj še nismo).

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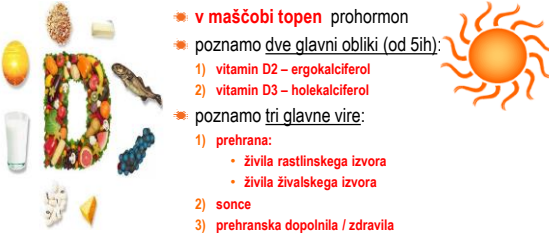
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**10** Nesmotrno dopolnjevanje prehrane s **prehranskimi dopolnili**



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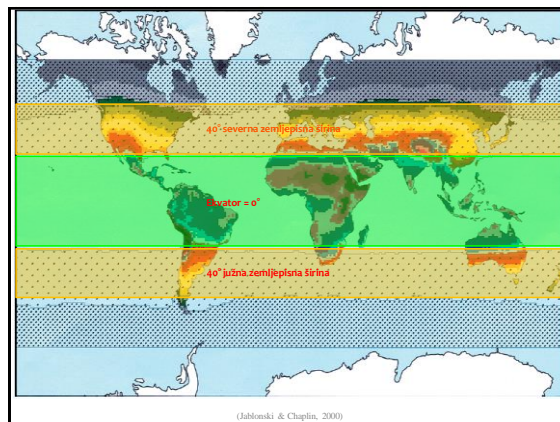
## Vitamin D – vitamin ...



- **v maščobi topen** prohormon
- poznamo **dve glavni obliki** (od 5ih):
  - 1) **vitamin D2 – ergokalciferol**
  - 2) **vitamin D3 – holekalciferol**
- poznamo **tri glavne vire**:
  - 1) **prehrana**:
    - živila rastlinskega izvora
    - živila živalskega izvora
  - 2) **sonce**
  - 3) **prehranska dopolnila / zdravila**

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### 10 Major Causes of Obesity and Weight Gain

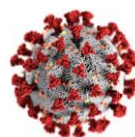


- Lifestyle stress
- Parental approach
- Junk food
- Lack of sleep
- Energy imbalance
- Hormones
- Sedentary lifestyle
- Change in food habits
- Genetic reasons
- False information

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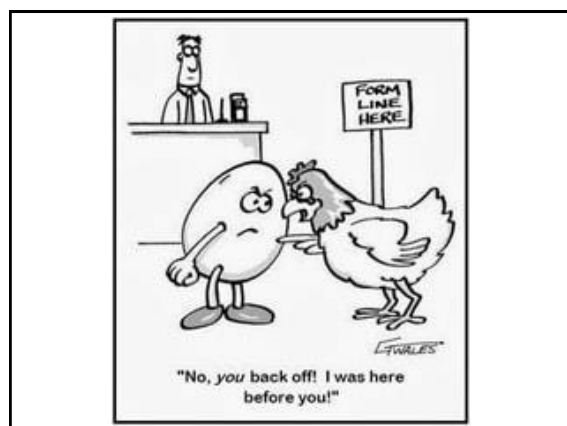
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## Zaključek

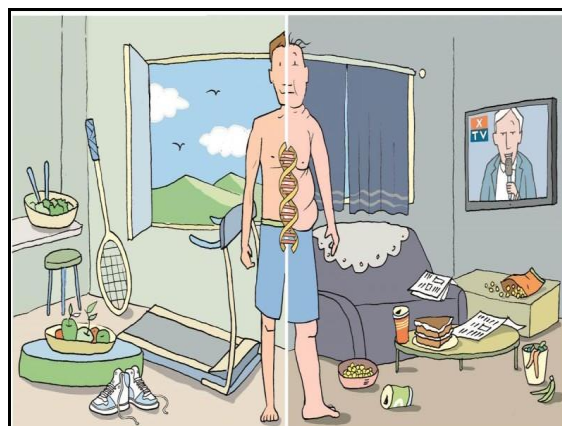


- Zdrava in uravnotežena prehrana je ključnega pomena za optimalno delovanje našega imunskega sistema.
  - Posegajte po hranilno bogatih živilih in ne hranilno revnih.
  - Poskrbite za ustrezen vnos tekočin.
  - Ohranite priporočeno telesno maso.
  - Centri za krepitev zdravja nujno potrebni.
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