

# Čáry-máry-fuk: ČOKOLÁDA ŤA ZBAVÍ NADVÁHY

O tom, ako funguje vedecká metóda



Zuzana Masárová

# Bývame obklopaní množstvom informácií

## Intake of Carotenoids and Retinol in Relation to Risk of Prostate Cancer

Edward Giovannucci, Alberto Ascherio, Eric B. Rimm, Meir J. Stampfer, Graham A. Colditz, Walter C. Willett\*

**Background:** Several human studies have observed a direct association between retinol (vitamin A) intake and risk of prostate cancer; other studies have found either an inverse association or no association of intake of β-carotene (the major provitamin A) with risk of prostate cancer. Data regarding carotenoids other than β-carotene in relation to prostate cancer risk are sparse. **Purpose:** We conducted a prospective cohort study to examine the relationship between the intake of various carotenoids, retinol, fruits, and vegetables and the risk of prostate cancer. **Methods:** Using responses to a validated, semiquantitative food-frequency questionnaire mailed to participants in the Health Professionals Follow-up Study in 1986, we assessed dietary intake for a 1-year period for a cohort of 47 894 eligible subjects in

cidence but suggest that tomato-based foods may be especially beneficial regarding prostate cancer risk. [J Natl Cancer Inst 1995;87:1767-76]

Throughout the Western world, prostate cancer is a large and growing problem. Without reductions in incidence or improvements in treatment, about 40 000 men in the United States will die annually from this malignancy by the year 2000 (1). The success in treating advanced prostate cancers remains poor, drawing attention to dietary factors that may influence risk of this malignancy, particularly animal fat, retinol, and carotenoids (2,3). Adequate levels of vitamin A or retinol are necessary for the normal control of both cellular differentiation and proliferation (4), and various retinoids have displayed the ability to inhibit carcinogenesis in animal models (5), including prostate

Existuje fínska štúdia, ktorá potvrdila vyšší výskyt cievnych mozgových príhod práve po posune času. Jedna britská štúdia zas hovorí o zvýšení rizika srdečového infarktu dva dni po zmene času. Nevieme, aká je bezprostredná príčina tohto javu, ale zrejme súvisí s narušením spánkového cyklu, fragmentáciou spánku alebo s desynchronizáciou viacerých biologických rytmov, napríklad kortizolu, stresového hormónu, ktorého najvyššia hladina je ráno, alebo melatonínu, ktorého koncentrácia je zas ráno najnižšia. Najčastejší výskyt cievnej mozgovej príhody alebo infarktu myokardu je pritom v ranných hodinách. Všetky procesy v našom tele, dokonca i choroby, sú podliehajú istým rytmom.

## Children who walk to school concentrate better | ScienceNordic

[sciencenordic.com/children-who-walk-school-concentrate-better](http://sciencenordic.com/children-who-walk-school-concentrate-better) ▼ Preložiť túto stránku  
30. 11. 2012 - Children who walk to school concentrate better. November 30 ... Almost 20,000 schoolchildren aged 5-19 participated in the study. The pupils ...

## Boys find it harder to concentrate at school, ESRI study finds

<https://www.irishtimes.com/.../boys-find-it-harder-to-concentrate-...> ▼ Preložiť túto stránku  
7. 11. 2017 - The study found children reported to be overweight or who had a poor diet were more likely to come from lower income families. Photograph: ...

## Hot classrooms harm children's academic performance, study finds

<https://www.telegraph.co.uk> ▶ News ▶ Science ▼ Preložiť túto stránku  
30. 5. 2018 - Hot classrooms harm children's academic performance, study finds. Save ... more likely to be "distracted, agitated and find it harder to focus".

## 10 Evidence-backed Tips to Teach Kids Focus and Concentration ...

<https://raising-independent-kids.com> ▶ All posts ▼ Preložiť túto stránku  
29. 5. 2017 - Helping young children concentrate is important, especially when they ... One study found that self-regulated learners are more likely to take on ...

*al of Personality and Social Psychology, 100, 407-425.*

[www.apa.org/pubs/journals/psp/index.aspx](http://www.apa.org/pubs/journals/psp/index.aspx) © 2011 American Psychological Association

0022-3514/10/\$12.00 DOI: 10.1037/a0021524

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Feeling the Future: Experimental Evidence for  
Anomalous Retroactive Influences on Cognition and Affect

Cornell University

The term *psi* denotes anomalous processes of information or energy transfer that are currently unexplained in terms of known physical or biological mechanisms. Two variants of *psi* are *precognition* (conscious cognitive awareness) and *premonition* (affective apprehension) of a future event that could not otherwise be anticipated through any known inferential process. Precognition and premonition are themselves special cases of a more general phenomenon: the anomalous retroactive influence of some future event on an individual's current responses, whether those responses are conscious or nonconscious, cognitive or affective. This article reports 9 experiments, involving more than 1,000 participants, that test for retroactive influence by "time-reversing" well-established psychological effects so that the individual's responses are

# Bývame obklopaní množstvom informácií

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*Background:* Several human studies have shown an association between retinol (vitamin A) intake and risk of prostate cancer; other studies have shown no association or no association of major provitamin A with risk regarding carotenoids other than beta-carotene. A prospective cohort study to examine the intake of various carotenoids and the risk of prostate cancer was conducted. A questionnaire mailed to participants in the Health Professionals Follow-up Study in 1986, we followed them for a 1-year period for a cohort of 47,813 men.

**Has the world gone coco? Eating chocolate can help you LOSE weight**

GOOD news slimmers! New research claims that eating chocolate can actually help you beat the bulge.

Facebook 215    Tweet 11    Share 1    Published 30th March 2015

By Laura Mitchell

Children who walk to school

[scienzenordic.com/children-who-walk-to-school](http://scienzenordic.com/children-who-walk-to-school)

30. 11. 2012 - Children who walk to school rather than being driven to school by parents are more likely to be active and less likely to be obese. This study involved 1,200 schoolchildren aged 5-19 participating in the European Health Survey.

Boys find it harder to concentrate

<https://www.irishtimes.com/.../boys-find-it-harder-to-concentrate>

7. 11. 2017 - The study found children from lower income families were more likely to come from lower income families.

Hot classrooms harm children's learning

<https://www.telegraph.co.uk/news/uk-news/education/11700000/Hot-classrooms-harm-childrens-learning.html>

30. 5. 2018 - Hot classrooms harm children's learning. Children in hot classrooms are more likely to be "distracted, agitated and find it harder to concentrate".

10 Evidence-backed Tips to Teach

<https://raising-independent-kids.com/all-tips/>

29. 5. 2017 - Helping young children concentrate better at school. One study found that self-regulated learners are more likely to succeed in school.



ska štúdia, ktorá potvrdila vyšší výskyt cievnych mozgových infarktu dva dni po zmene času. Jedna britská štúdia zas hovorí o zvýšení rizika infarktu dva dni po zmene času. Nevieme, aká je bezprostredná vzájomnosť, ale zrejme súvisí s narušením spánkového cyklu, spánku alebo s desynchronizáciou viacerých biologických procesov ako sú adrenalin, kortizolu, stresového hormónu, ktorého najvyššia hladina je v deň spánku a najnižšia v deň vstania. Tieto hormóny sú súčasťou cievnej mozgovej príhody alebo infarktu myokardu je v deň vstania. Všetky procesy v našom tele, dokonca i choroby, sú synchronizované s rytmom spánku.

Psychology, 100, 407-425.  
<http://psycnet.apa.org/index.aspx?fa=1&id=2011-3514-010>

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0033-295X/10/\$12.00 DOI: 10.1037/a0021524

This is the peer reviewed version of the following article: Precognition and premonition: Experimental Evidence for

Psychological Influences on Cognition and Affect

Cornell University.

Precognition and premonition are processes of information or energy transfer that are not mediated by known physical or biological mechanisms. Two types of precognition are distinguished: *precognition* (conscious cognitive awareness) and *premonition* (nonconscious perception of an event that could not otherwise be anticipated). Precognition and premonition are themselves well-known phenomena. The anomalous retroactive influence of a past event on an individual's current responses, whether those responses are conscious or nonconscious, cognitive or affective. This article reports 9 experiments, involving more than 1,000 participants, that test for retroactive influence by "time-reversing" well-established psychological effects so that the individual's responses are influenced by events that occurred before they were experienced. The results support the reality of precognition and premonition.

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Intake of Carotenoids and Retinol and Risk of Prostate Cancer

Edward Giovannucci, Alberto Ascherio,  
Stampfer, Graham A.

**Background:** Several human studies have shown a positive association between retinol (vitamin A) intake and risk of prostate cancer; other studies have shown no association or no association of carotenoids with risk. Major prospective cohort studies regarding carotenoids other than retinol and prostate cancer risk are sparse. In this study, we conducted a prospective cohort study to examine the association between the intake of various carotenoids and the risk of prostate cancer. Participants were men who completed a validated, semiquantitative questionnaire mailed to participants in the Health Professionals Follow-up Study in 1986, we asked them about their intake of various carotenoids. For a 1-year period for a cohort of 47 800 men, we collected information on diet, smoking, alcohol consumption, and other risk factors for prostate cancer.

Children who walk to school have lower risk of obesity

[scienzenordic.com/children-who-walk-to-school-have-lower-risk-of-obesity](http://scienzenordic.com/children-who-walk-to-school-have-lower-risk-of-obesity)

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29. 5. 2017 - Helping young children concentrate better at school. One study found that self-regulated learners are more likely to succeed in school.



# Vedecká metóda

Je jedným zo základných kameňov poznania.



Rigorózny proces:

- 1) Otázka
- 2) Hypotéza / Predpoved'
- 3) Test / Experiment
- 4) Pozorovanie
- 5) Analýza
- 6) Záver a implikácie

Štúdie sú opakovateľné, publikované v recenzovaných časopisoch.

# Kocky



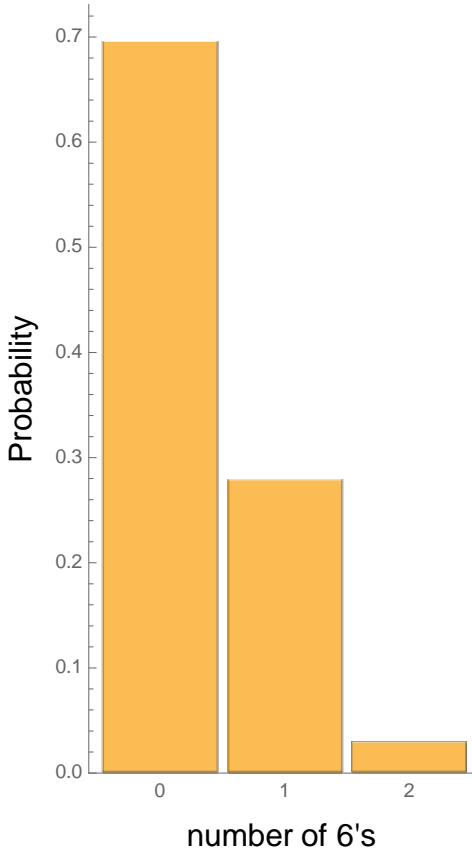
- 1) Hod si 15x kockou a spočítaj, koľkokrát z týchto hodov ti padla 6ka.
- 2) Je tvoja kocka férová alebo navážená? Ako by si dokázal svoje tvrdenie?

# Kocky

Nápad: kocka je navážená, ak priveľakrát padá jedno číslo  
... ale, čo už je veľa?

# Kocky

Nápad: kocka je navážená, ak prveľakrát padá jedno číslo  
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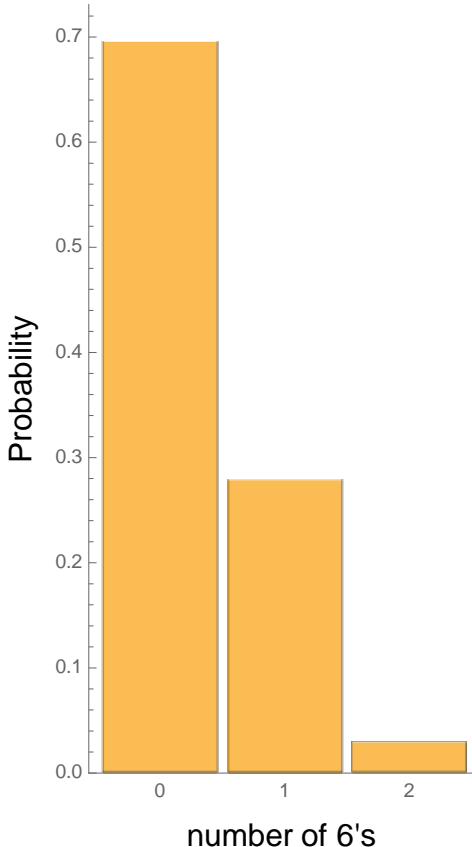


Možné kombinácie, ak hádžem 2x:

1 1	2 1	3 1	4 1	5 1	6 1
1 2	2 2	3 2	4 2	5 2	6 2
1 3	2 3	3 3	4 3	5 3	6 3
1 4	2 4	3 4	4 4	5 4	6 4
1 5	2 5	3 5	4 5	5 5	6 5
1 6	2 6	3 6	4 6	5 6	6 6

# Kocky

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Možné kombinácie, ak hádžem 2x:

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1 5	2 5	3 5	4 5	5 5	6 5
1 6	2 6	3 6	4 6	5 6	6 6

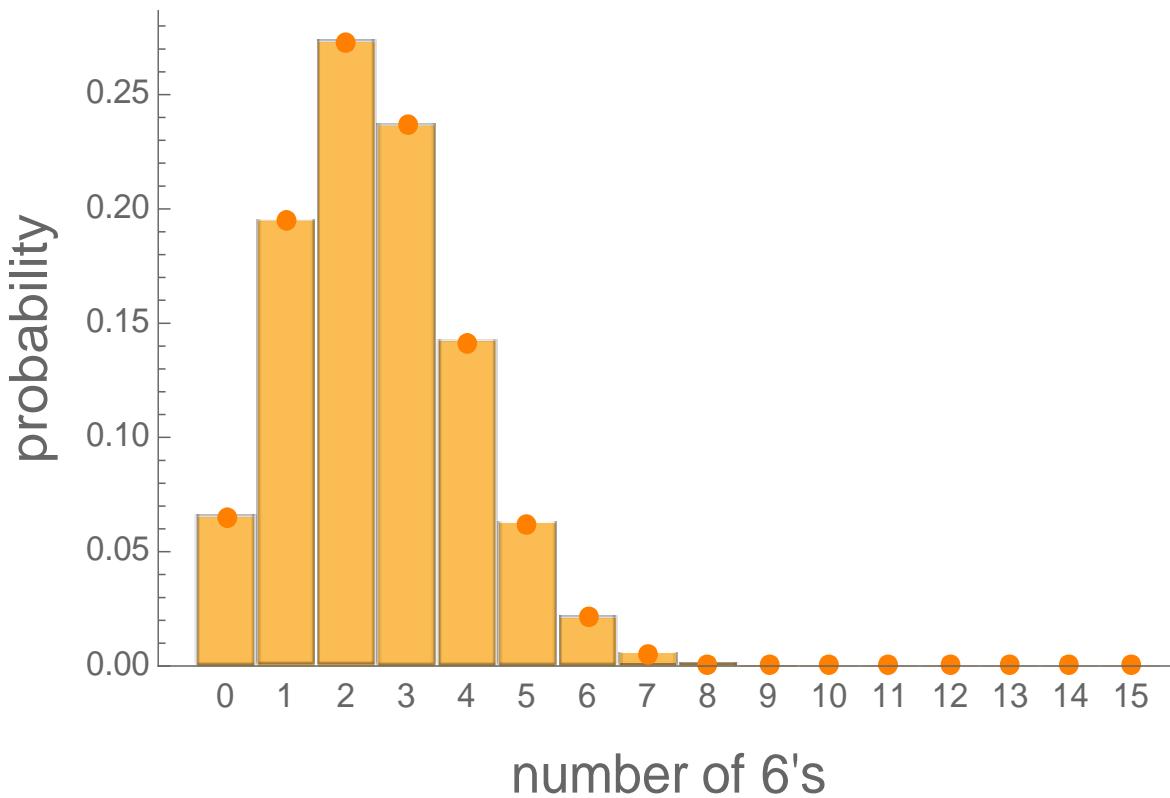
Pravdepodobnosť

$$0 \times 6\text{ka} = \frac{\boxed{?}}{36} = 25/36 = 69.4 \%$$

$$1 \times 6\text{ka} = \frac{\boxed{?}}{36} = 10/36 = 27.8 \%$$

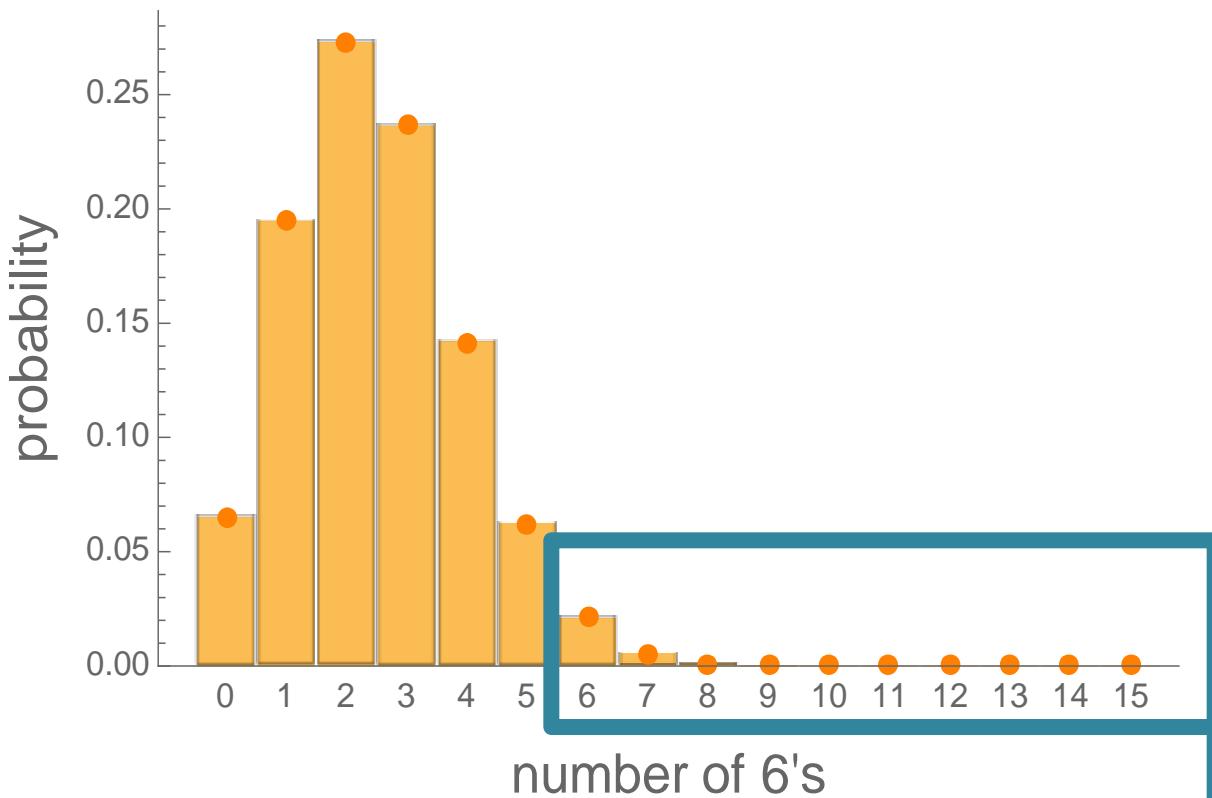
$$2 \times 6\text{ka} = \frac{\boxed{?}}{36} = 1/36 = 2.8 \%$$

# 15 hodov kockou:



Koľko 6tiek z 15 hodov je už fakt brutál šťastie?  
Akože, skoro nemožné s normálnou kockou?

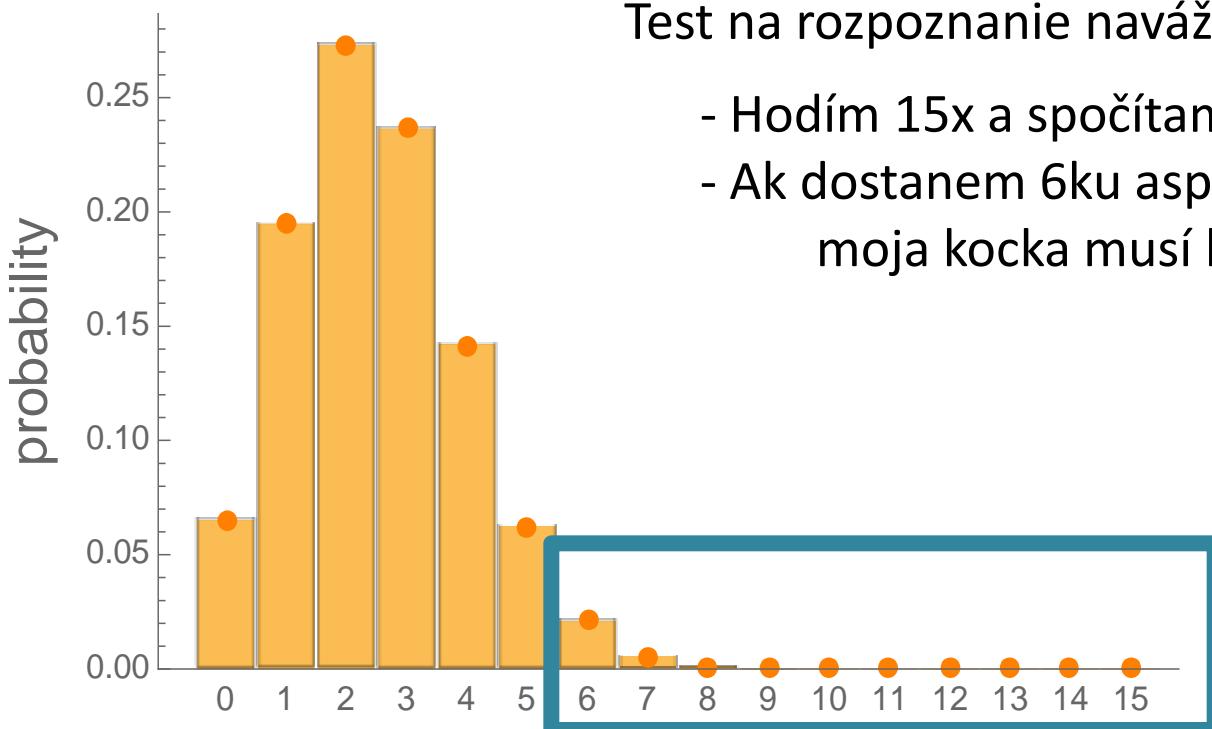
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*Pravdepodobnosť hodenia 6 alebo viac  
6tiek z 15 s normálnou kockou je <5%. TO STAČÍ!*

# 15 hodov kockou:



Test na rozpoznanie naváženej kocky:

- Hodím 15x a spočítam, koľkokrát padne 6ka
- Ak dostanem 6ku aspoň 6x,  
moja kocka musí byť navážená!

Koľko 6tiek z 15 hodov je už fakt brutál šťastie?  
Akože, skoro nemožné s normálnou kockou?

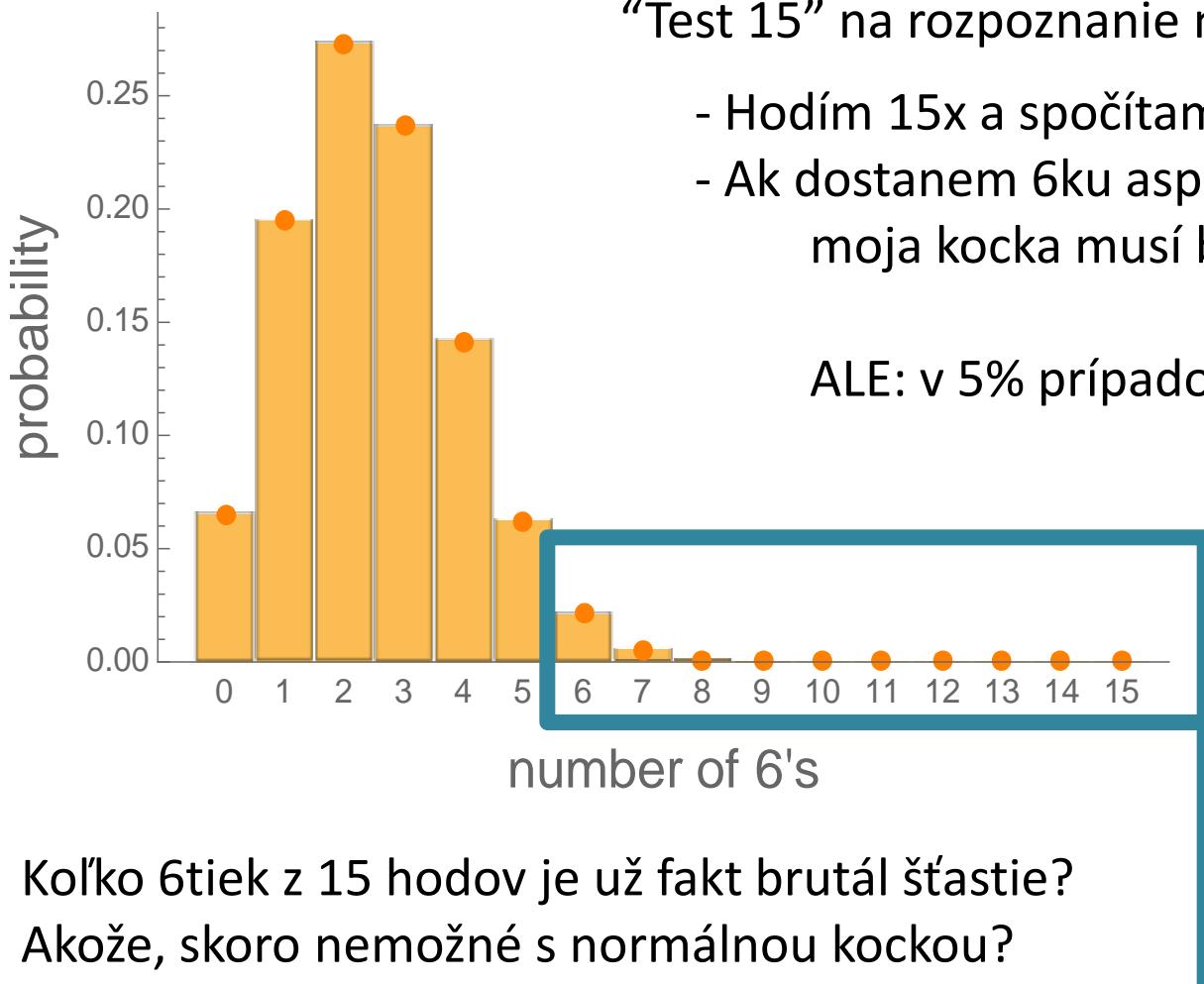
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# 15 hodov kockou:

“Test 15” na rozpoznanie naváženej kocky:

- Hodím 15x a spočítam, koľkokrát padne 6ka
- Ak dostanem 6ku aspoň 6x,  
moja kocka musí byť navážená!

ALE: v 5% prípadov môj test zlyhá.



Koľko 6tiek z 15 hodov je už fakt brutál šťastie?  
Akože, skoro nemožné s normálnou kockou?

*Pravdepodobnosť hodenia 6 alebo viac  
6tiek z 15 s normálnou kockou je <5%. TO STAČÍ!*

# Je kocka navážená?

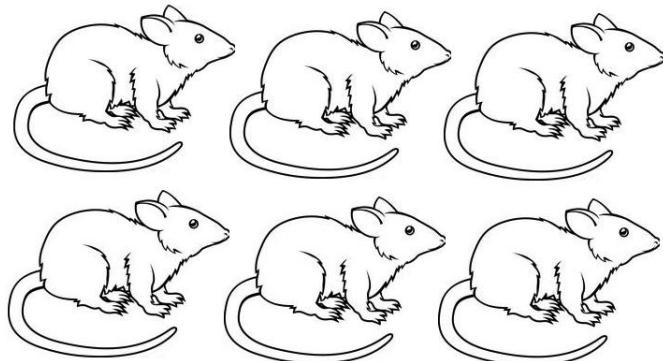


Možné výsledky:

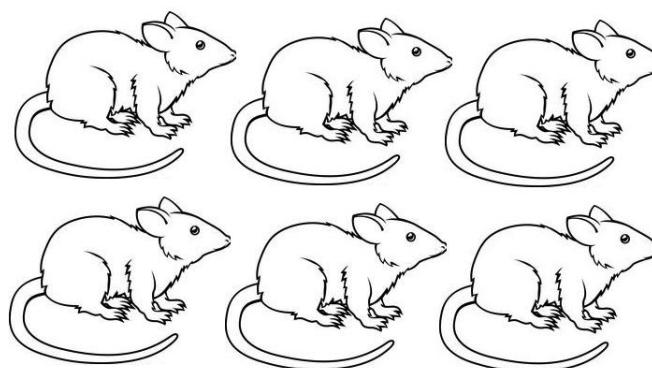
## V skutočnosti kocka

	JE navážená	NIE JE navážená
V "teste 15" mi vyjde	JE navážená	NIE JE navážená

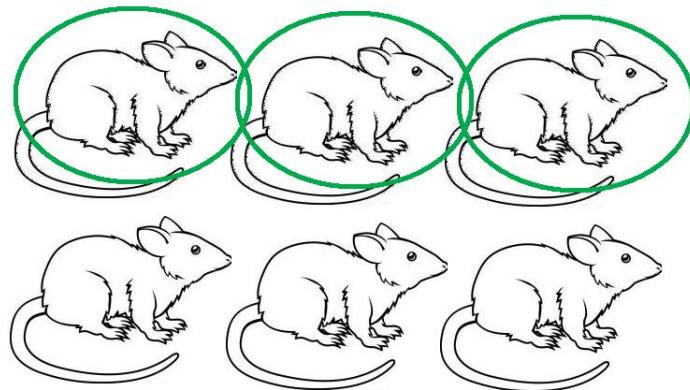
# Ako funguje vedecká štúdia... s evidence-based method



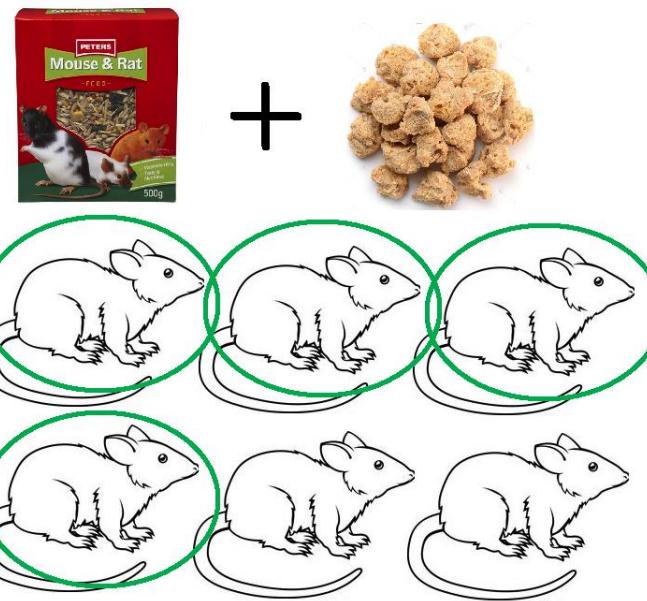
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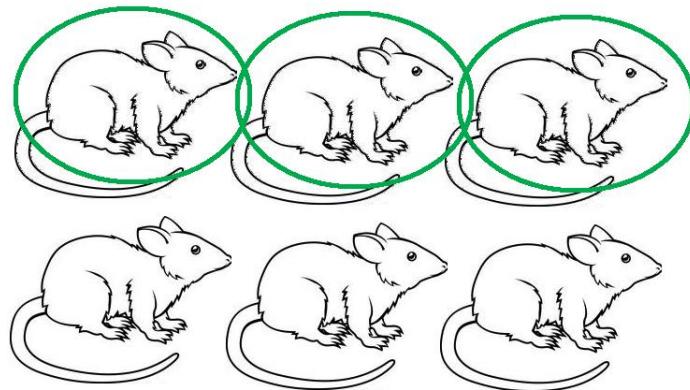


Kontrolná skupina:  
50%  
potkanov zomrie na rakovinu

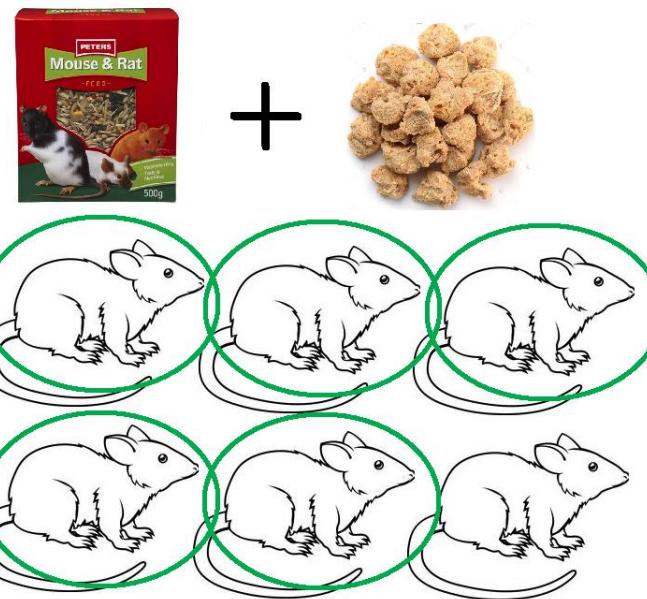


Kontrolná skupina:  
65%  
potkanov zomrie na rakovinu

# Ako funguje vedecká štúdia... s evidence-based method

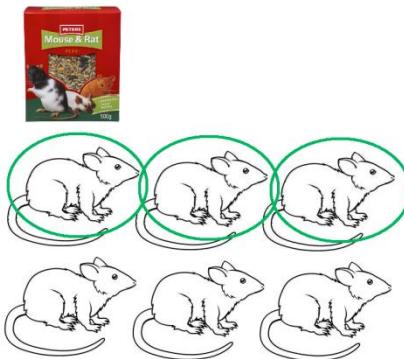


Kontrolná skupina:  
50%  
potkanov zomrie na rakovinu

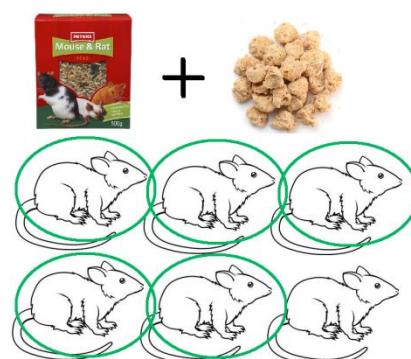


Kontrolná skupina:  
85%  
potkanov zomrie na rakovinu

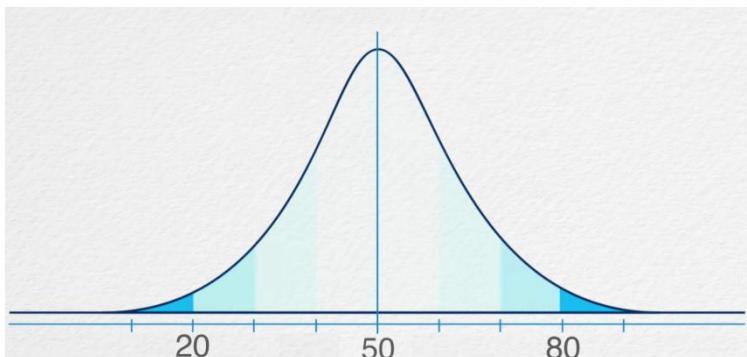
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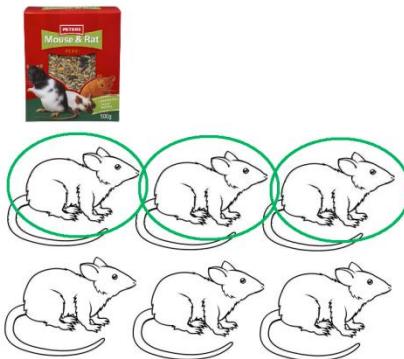
Kontrolná skupina:  
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potkanov zomrie na rakovinu



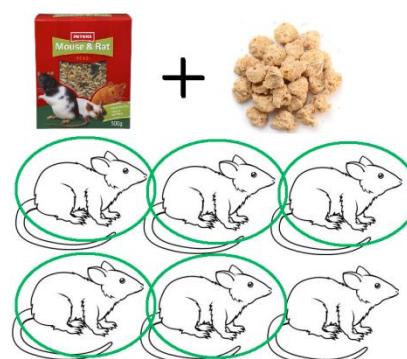
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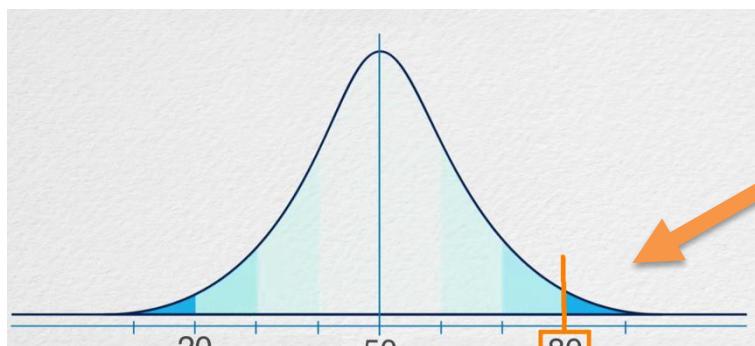
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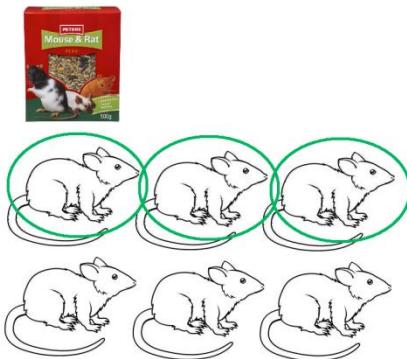


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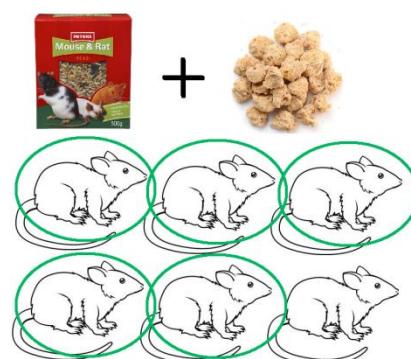


Pravdepodobnosť, že dosiahnem p-value alebo vyšší výsledok je 5%

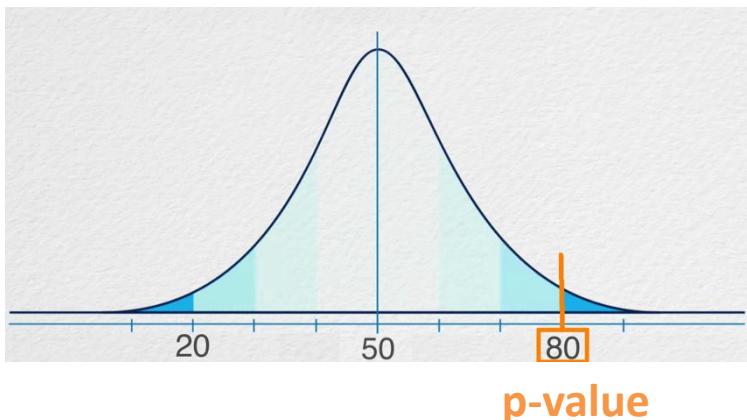
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Kontrolná skupina:  
50%  
potkanov zomrie na rakovinu



Kontrolná skupina:  
85%  
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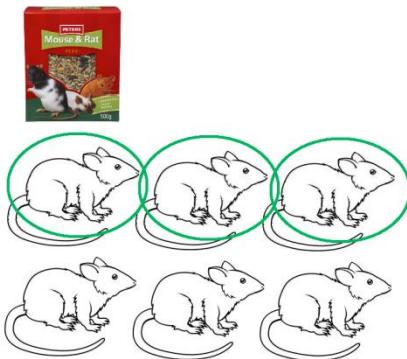
Môj  
záver



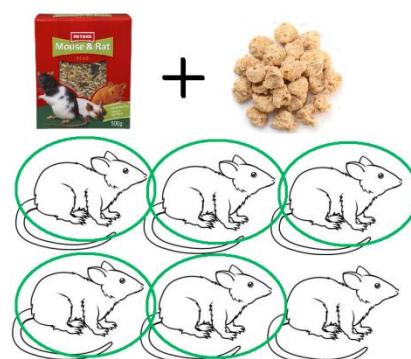
má vplyv  
nemá vplyv



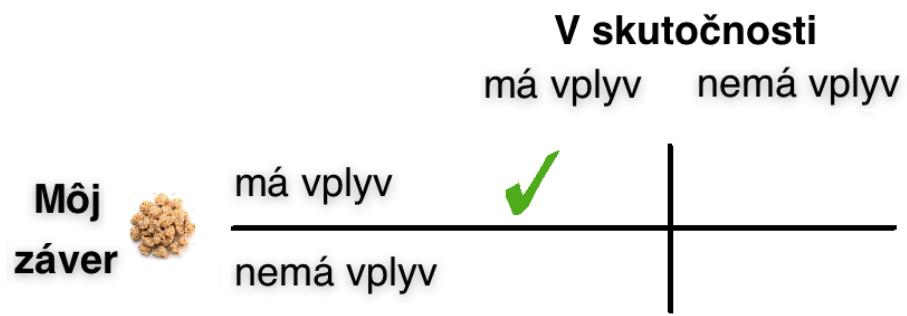
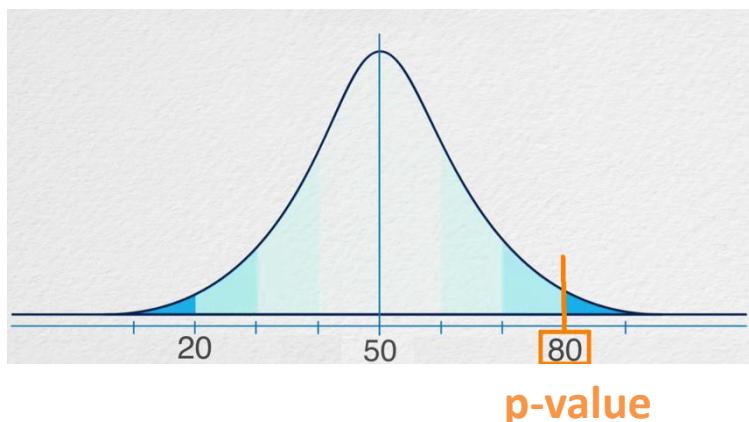
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Kontrolná skupina:  
50%  
potkanov zomrie na rakovinu



Kontrolná skupina:  
85%  
potkanov zomrie na rakovinu



# Možné výsledky

**V skutočnosti**

má vplyv

nemá vplyv

		V skutočnosti	
		má vplyv	nemá vplyv
Môj záver	má vplyv	CORRECT RESULT	INCORRECT
	nemá vplyv	INCORRECT	CORRECT RESULT

# Možné výsledky

**V skutočnosti**

má vplyv

nemá vplyv

	<b>Môj</b>	<b>vplyv</b>
<hr/>	<b>záver</b>	<hr/>
	nemá vplyv	

CORRECT RESULT	POSITIVE
FALSE	NEGATIVE

# Možné výsledky

**V skutočnosti**

má vplyv

nemá vplyv

	má vplyv
<b>Môj záver</b>	má vplyv
	nemá vplyv

CORRECT RESULT	5%	FALSE
NEGATIVE	POSITIVE	CORRECT RESULT

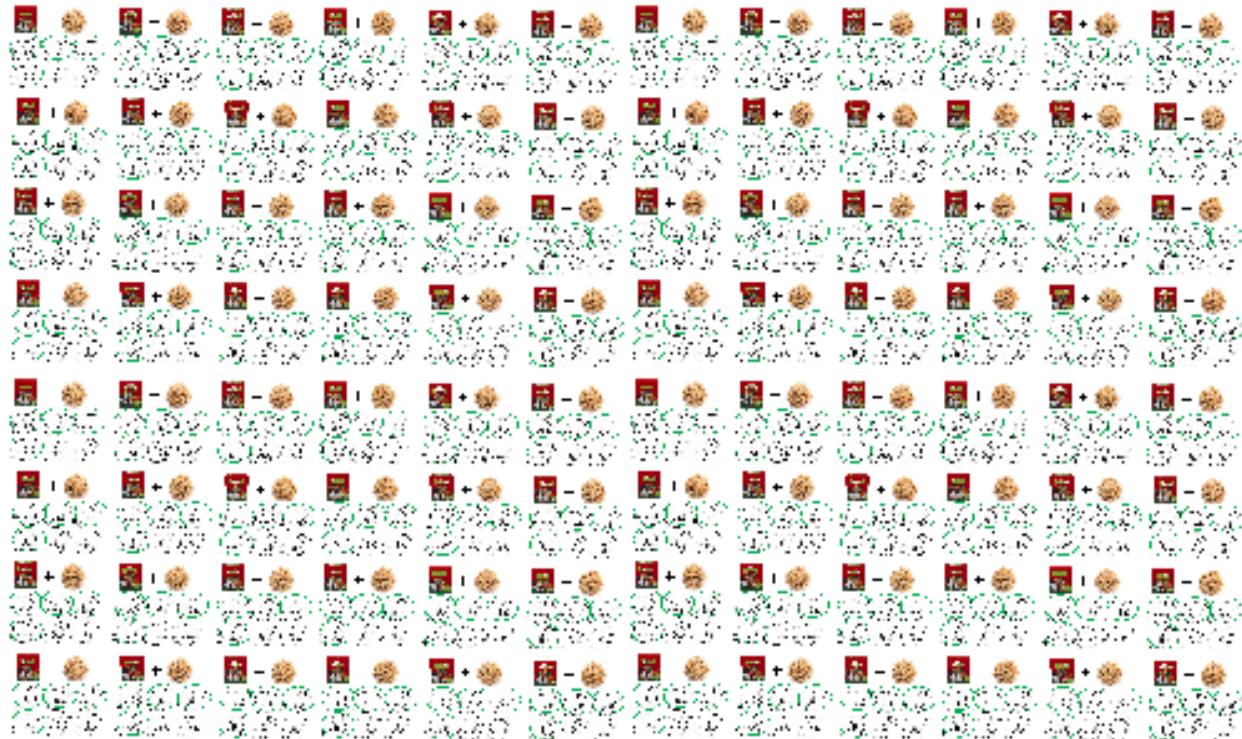
# Možné výsledky

**V skutočnosti**

má vplyv      nemá vplyv

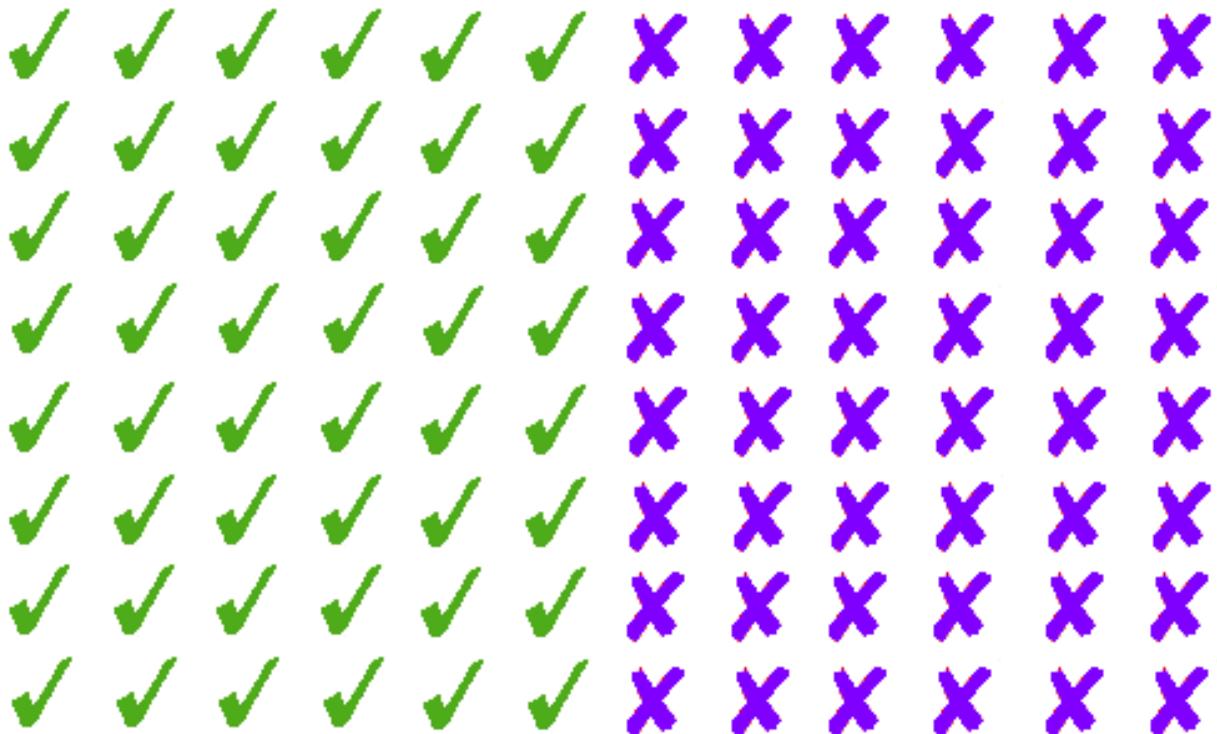
		má vplyv	nemá vplyv
Môj záver	má vplyv	CORRECT RESULT	FALSE
	nemá vplyv	20% NEGATIVE	POSITIVE

# Všetky štúdie



1000 štúdií:

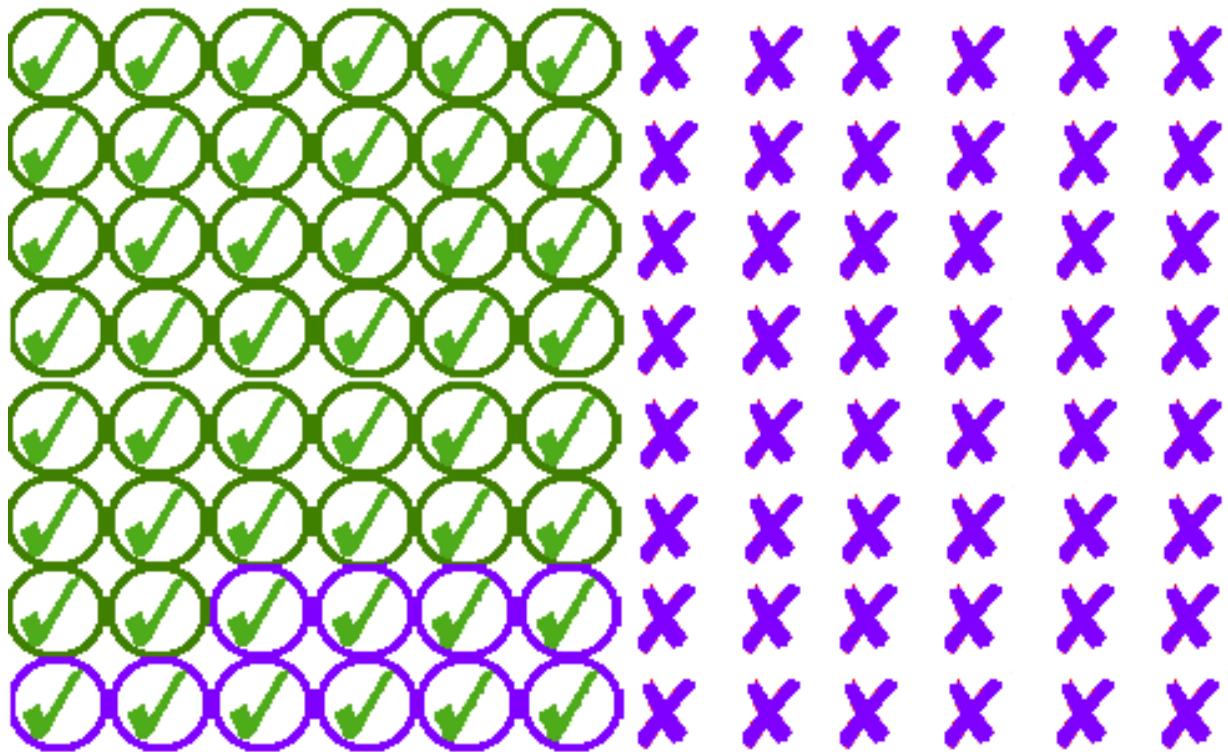
# Všetky štúdie



1000 štúdií: 500 hypotéz platí – 500 hypotéz neplatí

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# Všetky štúdie

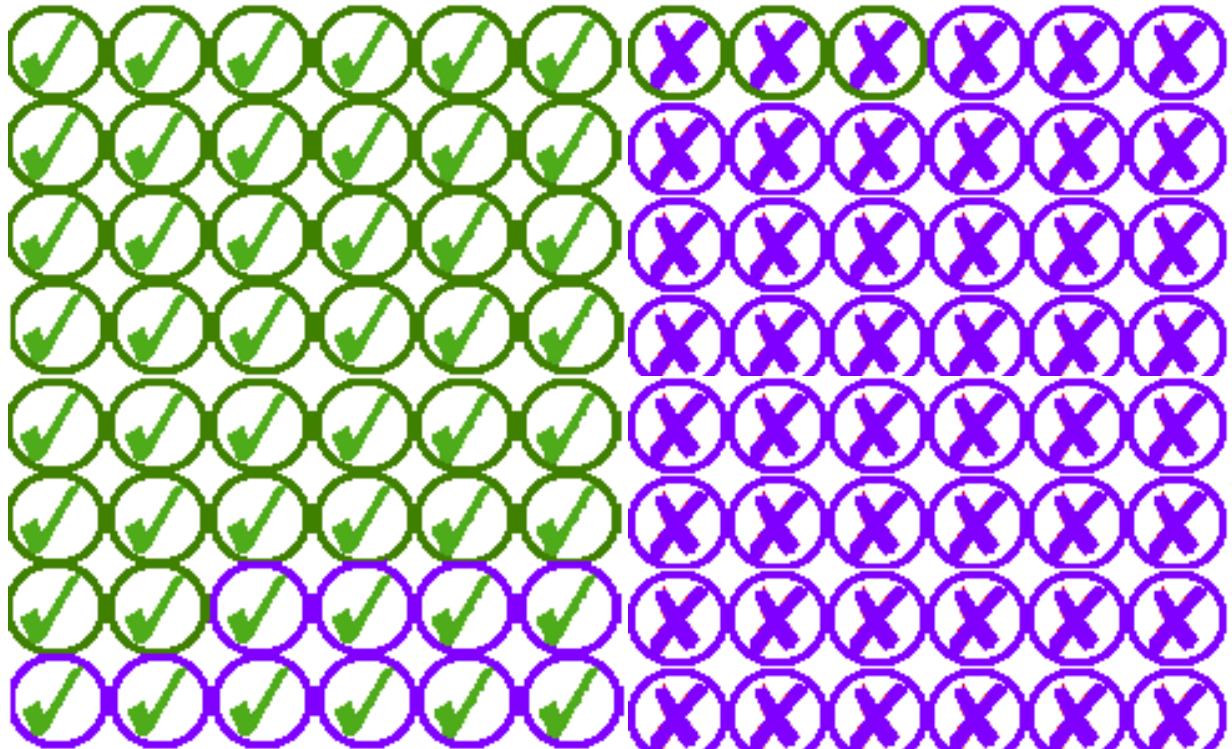


1000 štúdií: 500 hypotéz platí – 500 hypotéz neplatí

---

Môj výsledok: 400 áno, platí!  
 100 nie, neplatí!

# Všetky štúdie



1000 štúdií: 500 hypotéz platí – 500 hypotéz neplatí

Môj výsledok: 400 áno, platí! 25 nie, platí!  
 100 nie, neplatí! 475 áno, neplatí!

**875/1000**

=

**87.5%** štúdií  
je správne

# Všetky štúdie

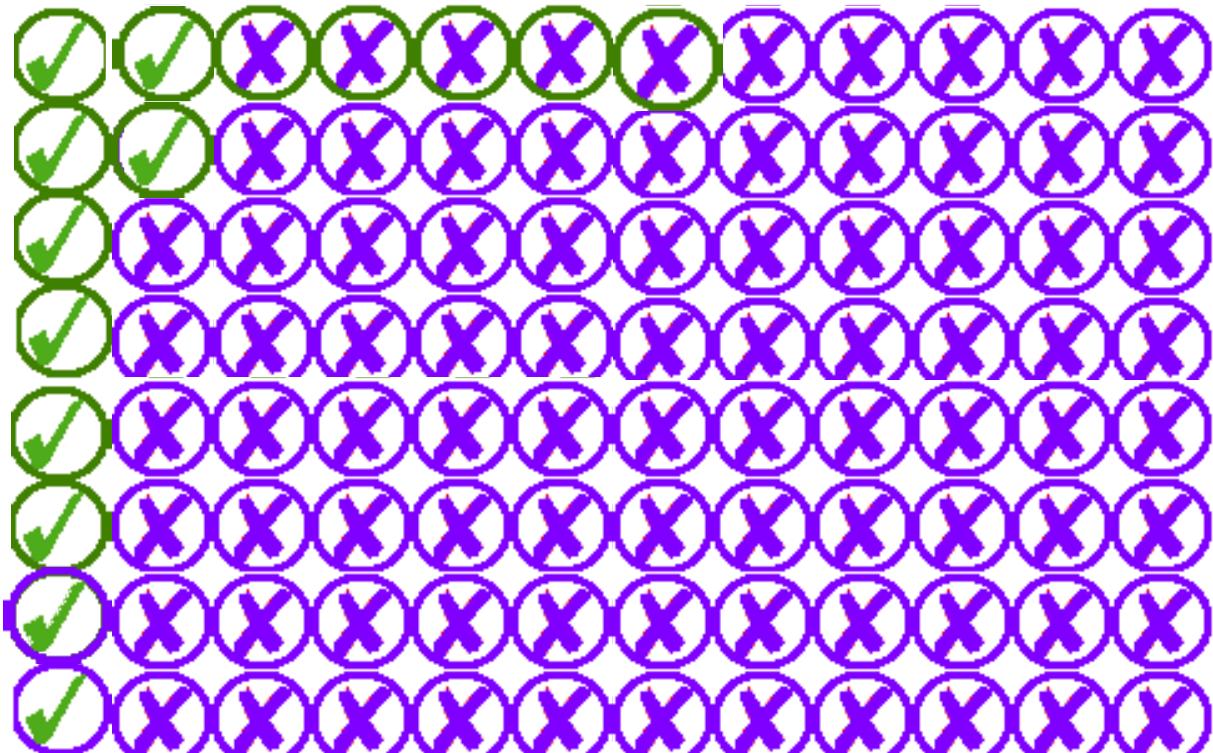
Drvivé  
množstvo  
sú  
nepravdivé  
hypotézy

✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
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✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

1000 štúdií: 100 hypotéz platí 900 hypotéz neplatí

# Všetky štúdie

Drvivé  
množstvo  
sú  
nepravdivé  
hypotézy



1000 štúdií:    100 hypotéz platí    900 hypotéz neplatí

Môj výsledok:    80 áno, platí!    45 nie, platí!  
                      20 nie, neplatí!    855 áno, neplatí!

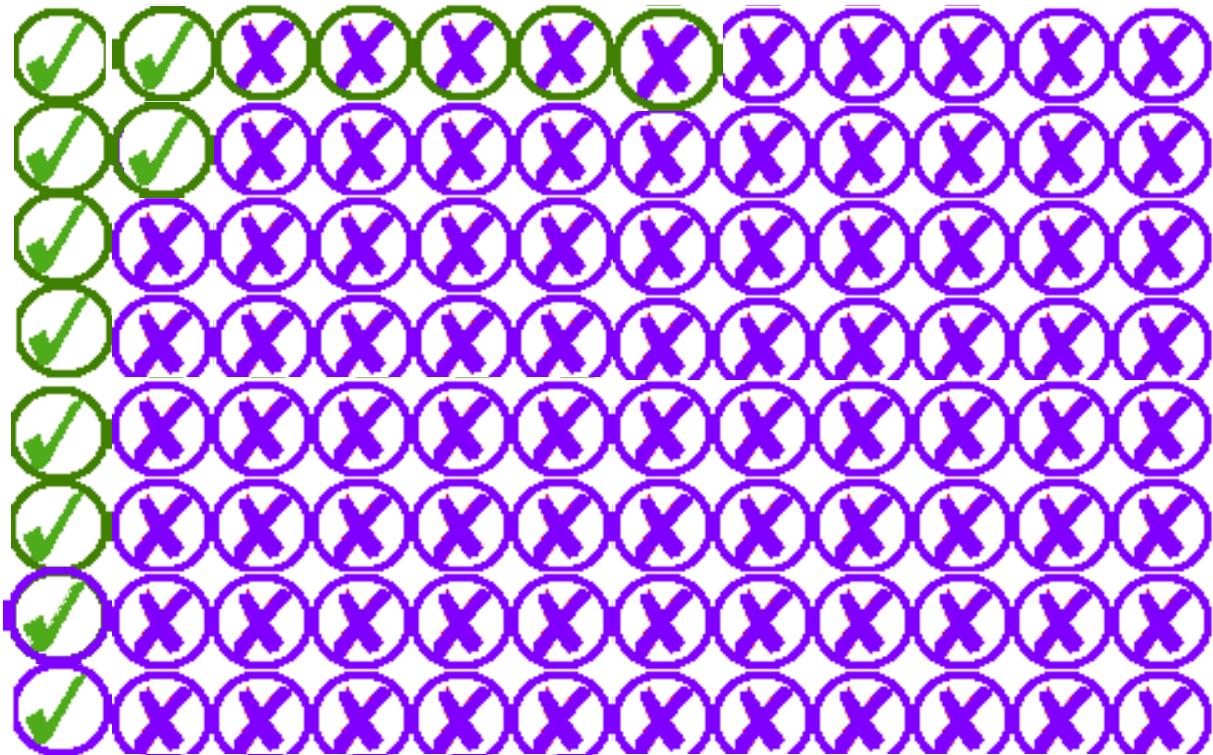
**935/1000**

=

**93.5%** štúdií  
je správne

# Všetky štúdie

Drvivé  
množstvo  
sú  
nepravdivé  
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=

**93.5%** štúdií  
je správne

✓, ✗ =



HEURÉKA,  
SÓJA  
FNGUJE!

$$\frac{\text{✓}}{\text{✓} + \text{✗}} = \frac{\text{Počet naozajstných objavov}}{\text{Počet "vyzerá to ako" objavov}}$$

✓, ✗ =



HEURÉKA,  
SÓJA  
FNGUJE!

$$\frac{\text{✓}}{\text{✓} + \text{✗}} = \frac{\text{Počet naozajstných objavov}}{\text{Počet "vyzerá to ako" objavov}}$$

1000 štúdií: 100 hypotéz platí 900 hypotéz neplatí

Môj výsledok: **✓ 80 áno, platí!** **✗ 45 nie, platí!**  
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**935/1000**

=

**93.5%** štúdií  
je správne

✓, ✗ =



HEURÉKA,  
SÓJA  
FNGUJE!

$$\frac{\text{✓}}{\text{✓} + \text{✗}} = \frac{\text{Počet naozajstných objavov}}{\text{Počet "vyzerá to ako" objavov}} = \frac{80}{125} = 64\%$$

1000 štúdií: 100 hypotéz platí 900 hypotéz neplatí

Môj výsledok: ✓ 80 áno, platí! ✗ 45 nie, platí!  
✓ 20 nie, neplatí! ✗ 855 áno, neplatí!

**935/1000**

=

**93.5%** štúdií  
je správne

# Koľko percent (pozitívnych) štúdií je správne?

		V skutočnosti	
		má vplyv	nemá vplyv
Môj záver	má vplyv	CORRECT RESULT	FALSE POSITIV E
	nemá vplyv	FALSE NEGATIVE	CORRECT RESULT

FALSE POSITIVES: 1-5% z neplatných hypotéz

FALSE NEGATIVES: 20-70% z platných hypotéz

POMER PLATNÉ:NEPLATNÉ HYPOTÉZY V OBLASTI: 0.1-1

# Koľko percent (pozitívnych) štúdií je správne?

		V skutočnosti	
		má vplyv	nemá vplyv
Môj záver	má vplyv	 $\frac{(1 - \beta)R}{(R + 1)}$	 $\frac{\alpha}{(R + 1)}$
	nemá vplyv	 $\frac{\beta R}{(R + 1)}$	 $\frac{1 - \alpha}{(R + 1)}$

$\alpha$  FALSE POSITIVES: 1-5% z neplatných hypotéz

$\beta$  FALSE NEGATIVES: 20-70% z platných hypotéz

$R$  POMER PLATNÉ:NEPLATNÉ HYPOTÉZY V OBLASTI: 0.1-1



John P.A. Ioannidis

# Koľko percent (pozitívnych) štúdií je správnych?

		V skutočnosti	
		má vplyv	nemá vplyv
Môj záver	má vplyv	 $\frac{(1 - \beta)R}{(R + 1)}$	 $\frac{\alpha}{(R + 1)}$
	nemá vplyv	 $\frac{\beta R}{(R + 1)}$	 $\frac{1 - \alpha}{(R + 1)}$

$\alpha$  FALSE POSITIVES: 1-5% z neplatných hypotéz

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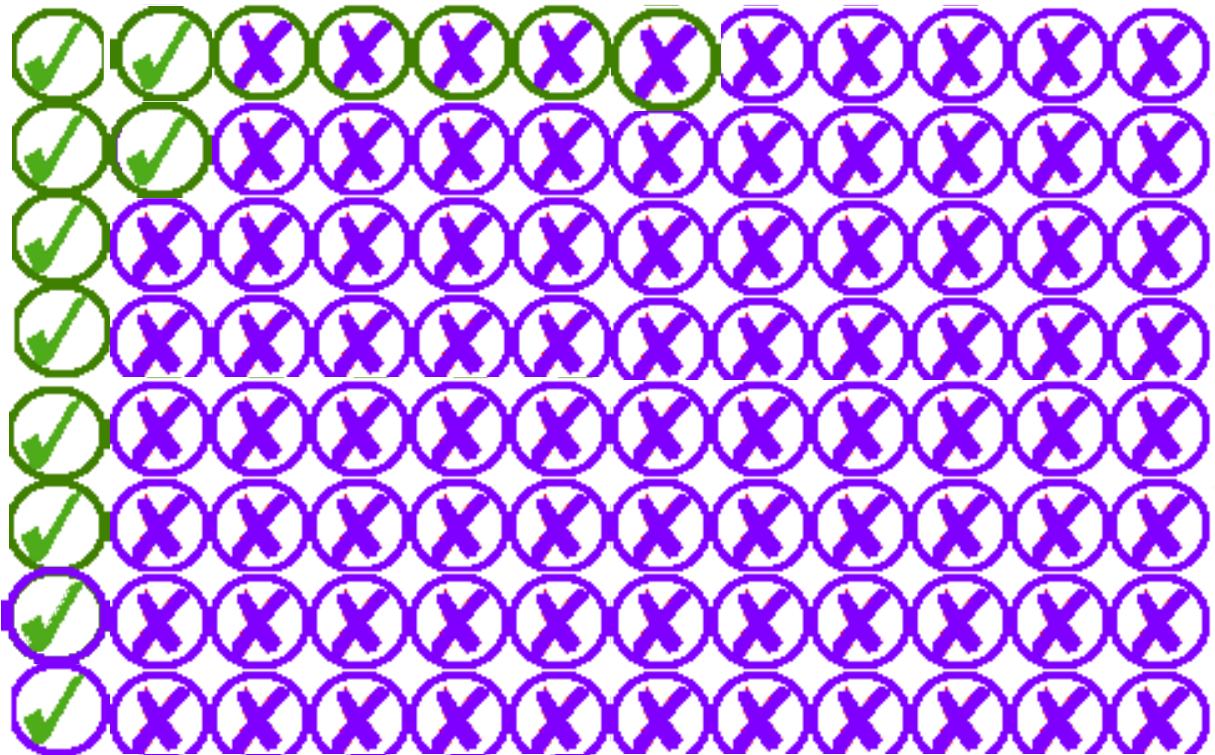
$R$  POMER PLATNÉ:NEPLATNÉ HYPOTÉZY V OBLASTI: 0.1-1

~28 – 76 % z pozitívnych štúdií  
je správnych!



John P.A. Ioannidis

# A pripočítajme bad practices in science...



1000 štúdií:    100 hypotéz platí    900 hypotéz neplatí

Môj výsledok:    80 áno, platí!    45 nie, platí!  
                    20 nie, neplatí!    855 áno, neplatí!

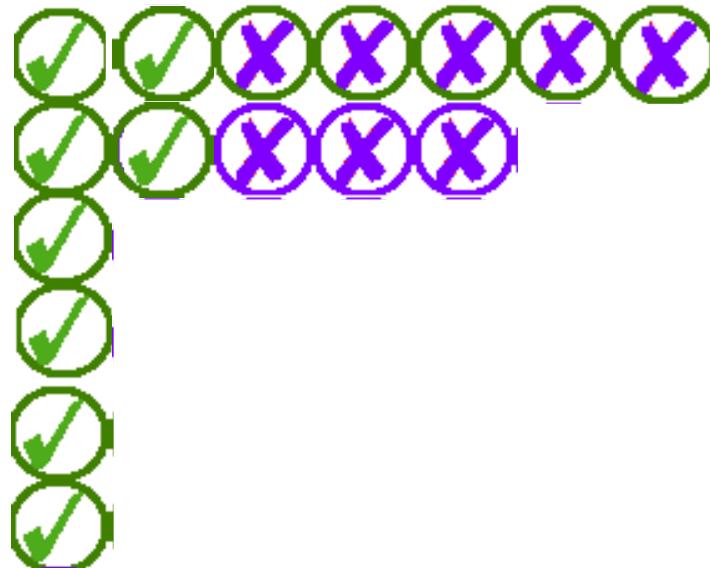
**935/1000**

=

**93.5%** štúdií  
je správne

# A pripočítajme bad practices in science...

Negatívne  
výsledky sa  
nepublikujú



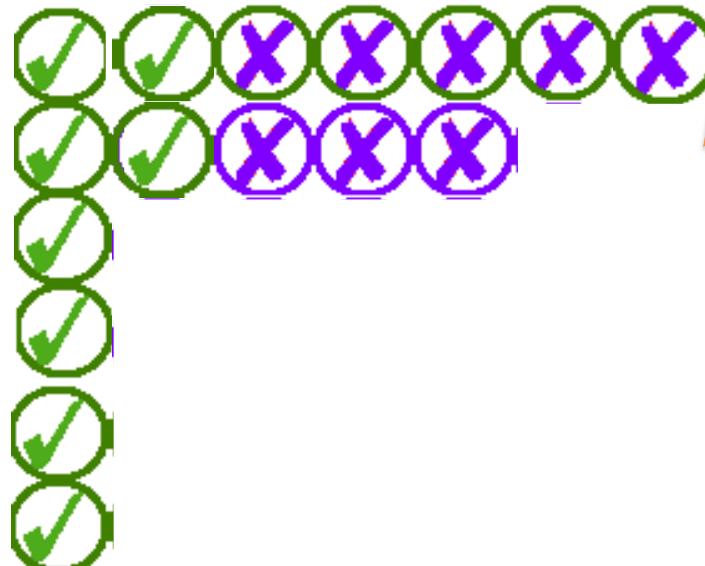
1000 štúdií: 100 hypotéz platí 900 hypotéz neplatí

Môj výsledok: 80 áno, platí! 45 nie, platí!  
~~20 0 nie,neplatí!~~ 855 31 áno,neplatí!

**111/156**  
=   
**71.2%** štúdií  
je správne

# A pripočítajme bad practices in science...

Negatívne  
výsledky sa  
nepublikujú



Štúdie sa  
nereplikujú

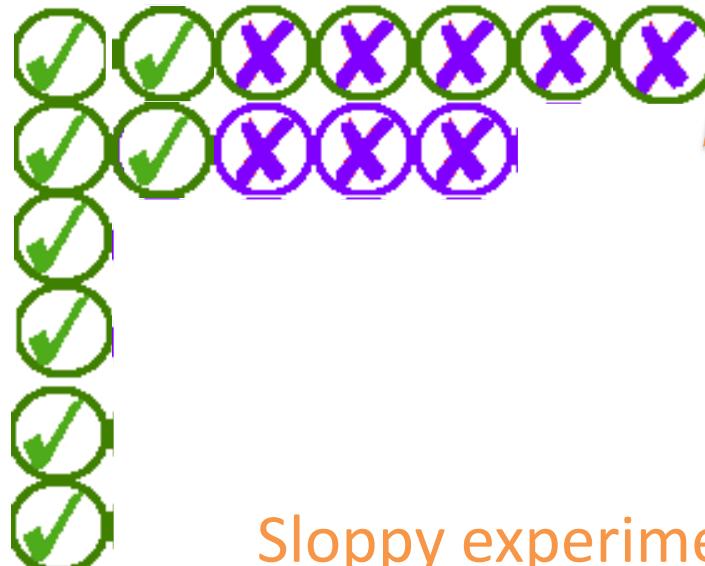
1000 štúdií:    100 hypotéz platí    900 hypotéz neplatí

Môj výsledok:    80 áno, platí!    45 nie, platí!  
                    20 0 nie,neplatí!    855 31 áno,neplatí!

**111/156**  
=   
**71.2%** štúdií  
je správne

# A pripočítajme bad practices in science...

Negatívne  
výsledky sa  
nepublikujú



Štúdie sa  
nereplikujú

Sloppy experiment design,  
Confirmation bias,

...

1000 štúdií: 100 hypotéz platí 900 hypotéz neplatí

Môj výsledok: 80 áno, platí! 45 nie, platí!  
~~20 0~~ nie, neplatí! ~~855 31~~ áno, neplatí!

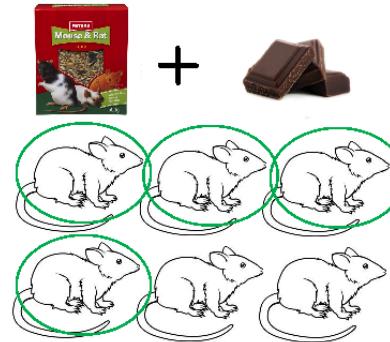
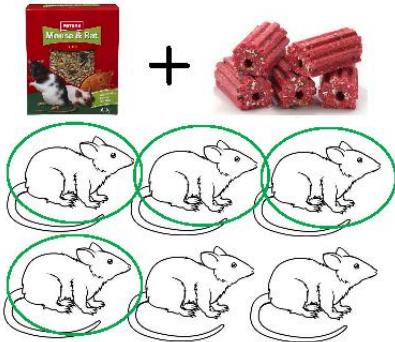
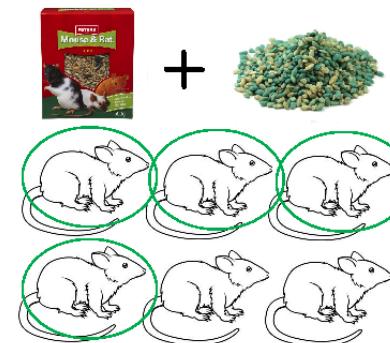
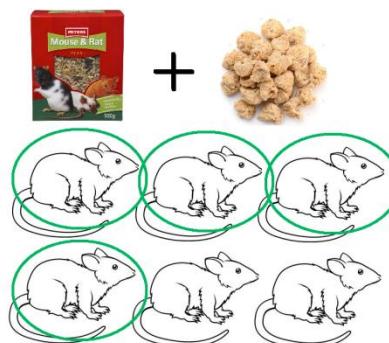
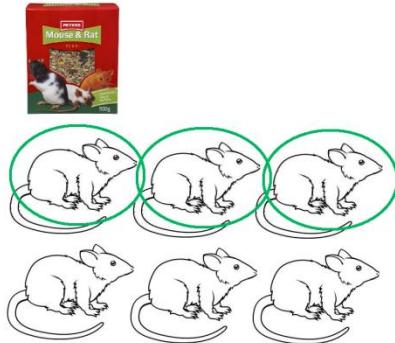
**111/156**

=

**71.2%** štúdií  
je správne

# Bad practice: Multiple testing

“Nechaj ma hádzať kockou, kým nepadne 6ka!”



Výsledkom je publikovanie false positive výsledku...

# Tak ako je to s tými štúdiami?...

Journal of Personality and Social Psychology; 100, 407-425.  
<http://www.apa.org/pubs/journals/psp/index.aspx>

This article may not exactly replicate the final version published in JPP.

Feeling

Anomalous Re

The term *psi* denotes a currently unexplained variants of *psi* are *prec* (affective apprehension) through any known inference special cases of a more general future event on an individual basis. Involving more than 1,000 reversing" well-established p

Journal List > Indian J Psychiatry > v.53(2); Apr-Jun 2011 >



Indian J Psychiatry. 2011 Apr-Jun; 53(2): 95-96.  
doi: 10.4103/0019-5545.82529

The MMR vaccine and autism:

T. S. Sathyaranayana Rao and Chittaranjan Andriamananjara

Author information ▶ Copyright and License Information ▶

This article has been cited by other articles in PMC.

In 1998, Andrew Wakefield and 12 of his colleagues suggested that the measles, mumps, and rubella (MMR) vaccination was associated with a pervasive developmental disorder in children. The design, and the speculative nature of the conclusion, vaccination rates began to drop because parents were worried about the safety of the vaccine.

Almost immediately afterward, epidemiological studies link between MMR vaccination and autism. [3,4] The studies also questioned because a temporal link between the two (MMR vaccine) or definition (autism), occur in early childhood.

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0022-3514/10/\$12.00  
**Has the world gone coco?**  
**Eating chocolate can help you LOSE weight**  
GOOD news slimmers! New research claims that eating chocolate can actually help you beat the bulge.

Facebook 215    Tweet 11    Share 1    Published 30th March 2015

By Laura Mitchell

Published 30th March 2015

Share 228

Email

Print

Comment

Like

Save

Report

Flag

Share

Comment

Like

Save

Report

Flag

# Čokoládová štúdia...

## Has the world gone coco? Eating chocolate can help you LOSE weight

OD news slimmers! New research claims that eating chocolate can really help you beat the bulge.

cebook 215 Twe 13 Shar 1 Share 228

Sara Mitchell / Published 30th March 2015



### WHY YOU MUST EAT CHOCOLATE DAILY

Doing so will accelerate your slim-down. When German researchers put dieters on a low-carb plan and gave some of them a daily dose of 1½ ounces of superdark chocolate, those who ate chocolate lost more weight steadily over time and stayed happier throughout the process than those who didn't get the treat. "When you eat chocolate on a diet, it's a daily reward, so you don't feel deprived," says study author Johannes J. Cannon, Ph.D., director



New research reveals that eating chocolate [GETTY]

The screenshot shows the homepage of the Daily Express. At the top, there is a banner for the Health section. Below the banner, there is a navigation menu with links to Home, News, Election, Sport, Comment, Finance, Travel, and Entertainment. Under the Health link, there are sub-links for Health, Life, Diets, Garden, Food, Style, Property, Tech, Saturday, and Cars. The main headline is "Chocolate accelerates weight loss: Research claims it lowers cholesterol and aids sleep". Below the headline, there is a sub-headline: "CAN you indulge your sweet tooth and lose weight? If it's chocolate that you crave then the answer seems to be yes." The article is by SARAH BARNES and was published on March 30, 2015. There are social sharing buttons for Facebook, Twitter, Google+, and Email. A small image of a woman is visible in the bottom right corner of the article area.

## Chocolate accelerates weight loss: Research claims it lowers cholesterol and aids sleep

CAN you indulge your sweet tooth and lose weight? If it's chocolate that you crave then the answer seems to be yes.

By SARAH BARNES

PUBLISHED: 10:31, Mon, Mar 30, 2015 | UPDATED: 20:28, Sat, Apr 4, 2015

SHARE

f TWEET g+ 2K



Chocolate can aid weight loss when combined with...

# ...bola vymyslená!

HEALTH

## I Fooled Millions Into Thinking Chocolate Helps Weight Loss. Here's How.



John Bohannon

5/27/15 4:23pm • Filed to: DEBUNKERY ▾

1.3M 545 282



“Slim by Chocolate!” the headlines blared. A team of German researchers had found that people on a low-carb diet lost weight 10 percent faster if they ate a chocolate bar every day. It made the front page of *Bild*, Europe’s largest daily newspaper, just beneath their update about the Germanwings crash. From there, it ricocheted around the internet and beyond, making news in more than 20 countries and half a dozen languages. It was discussed on television news shows. It appeared in glossy print, most recently in the June issue of *Shape* magazine (“Why You Must Eat Chocolate Daily,” page 128). Not only does chocolate accelerate weight loss, the study found, but it leads to healthier cholesterol levels and overall increased well-being. The *Bild* story quotes the study’s lead author, Johannes Bohannon, Ph.D., research director of the Institute of Diet and Health: “The best part is you can buy chocolate everywhere.”

I am Johannes Bohannon, Ph.D. Well, actually my name is John, and I’m a journalist. I do have a Ph.D., but it’s in the molecular biology of bacteria, not humans. The [Institute of Diet and Health?](#) That’s nothing more than a website.

Other than those fibs, the study was 100 percent authentic. My colleagues and I recruited actual human subjects in Germany. We ran an actual clinical trial, with subjects randomly assigned to different diet regimes. And the statistically significant benefits of chocolate that we reported are based on the actual data. It was, in fact, a fairly typical study for the field of diet research. Which is to say: It was terrible science. The results are meaningless, and the health claims that the media blasted out to millions of people around the world are utterly unfounded.

Here’s how we did it.

<https://io9.gizmodo.com/i-fooled-millions-into-thinking-chocolate-helps-weight-1707251800>

# Čokoládová štúdia...

...jej design bol pripravený tak, aby skoro určite vyprodukovala false positive... **HEURÉKA MOMENT!**

Group 1	Group 2	Group 3
low-carb diet	low-carb diet + 30g chocolate	Eat as usual

Meraných 18 rôznych faktorov:



+ váha / cholesterol / sodík / proteín v krvi / kvalita spánku / ...

# Štúdií je mnoho...

Journal of Personality and Social Psychology, 100, 407-425.  
<http://www.apa.org/pubs/journals/psp/index.aspx>

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0022-3514/10/\$12.00 DOI: 10.1037/a0021524

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## Feeling the Future: Experimental Evidence for Anomalous Retroactive Influences on Cognition and Affect

Cornell University

The term *psi* denotes anomalous processes of information or energy transfer that are currently unexplained in terms of known physical or biological mechanisms. Two variants of *psi* are *precognition* (conscious cognitive awareness) and *premonition* (affective apprehension) of a future event that could not otherwise be anticipated through any known inferential process. Precognition and premonition are themselves special cases of a more general phenomenon: the anomalous retroactive influence of some future event on an individual's current responses, whether those responses are conscious or nonconscious, cognitive or affective. This article reports 9 experiments, involving more than 1,000 participants, that test for retroactive influence by "time-reversing" well-established psychological effects so that the individual's responses are

Journal List > Indian J Psychiatry > v.53(2); Apr-Jun 2011 > PMC3136032



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Indian J Psychiatry. 2011 Apr-Jun; 53(2): 95-96.  
doi: 10.4103/0019-5545.82529

PMCID: PMC3136032  
PMID: 21772639

### The MMR vaccine and autism: Sensation, refutation, retraction, and fraud

T. S. Sathyaranayana Rao and Chittaranjan Andrade<sup>1</sup>

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This article has been cited by other articles in PMC.

In 1998, Andrew Wakefield and 12 of his colleagues[1] published a case series in the *Lancet*, which suggested that the measles, mumps, and rubella (MMR) vaccine may predispose to behavioral regression and pervasive developmental disorder in children. Despite the small sample size ( $n=12$ ), the uncontrolled design, and the speculative nature of the conclusions, the paper received wide publicity, and MMR vaccination rates began to drop because parents were concerned about the risk of autism after vaccination. [2]

Almost immediately afterward, epidemiological studies were conducted and published, refuting the posited link between MMR vaccination and autism.[3,4] The logic that the MMR vaccine may trigger autism was also questioned because a temporal link between the two is almost predestined: both events, by design (MMR vaccine) or definition (autism), occur in early childhood.

Existuje fínska štúdia, ktorá potvrdila vyšší výskyt cievnych mozgových prihod práve po posune času. Jedna britská štúdia zas hovorí o zvýšení rizika srdcového infarktu dva dni po zmene času. Nevieme, aká je bezprostredná príčina tohto javu, ale zrejme súvisí s narušením spánkového cyklu, fragmentáciou spánku alebo s desynchronizáciou viacerých biologických rytmov, napríklad kortizolu, stresového hormónu, ktorého najvyššia hladina je ráno, alebo melatonínu, ktorého koncentrácia je zas ráno najnižšia. Najčastejší výskyt cievnej mozgovej príhody alebo infarktu myokardu je pritom v ranných hodinách. Všetky procesy v našom tele, dokonca i choroby, teda podliehajú istým rytmom.

### Intake of Carotenoids and Retinol in Relation to Risk of Prostate Cancer

Edward Giovannucci, Alberto Ascherio, Eric B. Rimm, Meir J. Stampfer, Graham A. Colditz, Walter C. Willett\*

cidence but suggest that tomato-based foods may be especially beneficial regarding prostate cancer risk. [J Natl Cancer Inst 1995;87:1767-76]

**Background:** Several human studies have observed a direct association between retinol (vitamin A) intake and risk of prostate cancer; other studies have found either an inverse association or no association of intake of  $\beta$ -carotene (the major provitamin A) with risk of prostate cancer. Data regarding carotenoids other than  $\beta$ -carotene in relation to prostate cancer risk are sparse. **Purpose:** We conducted a prospective cohort study to examine the relationship between the intake of various carotenoids, retinol, fruits, and vegetables and the risk of prostate cancer. **Methods:** Using responses to a validated, semiquantitative food-frequency questionnaire mailed to participants in the Health Professionals Follow-up Study in 1986, we assessed dietary intake for a 1-year period for a cohort of 47 894 eligible subjects initially free of diagnosed cancer. Follow-up questionnaires were sent to the entire cohort in 1988, 1990, and 1992. We calculated the relative risk (RR) for each of the upper categories of intake of a specific food or nutrient by dividing

Throughout the Western world, prostate cancer is a large and growing problem. Without reductions in incidence or improvements in treatment, about 40 000 men in the United States will die annually from this malignancy by the year 2000 (1). The success in treating advanced prostate cancers remains poor, drawing attention to dietary factors that may influence risk of this malignancy, particularly animal fat, retinol, and carotenoids (2,3). Adequate levels of vitamin A or retinol are necessary for the normal control of both cellular differentiation and proliferation (4), and various retinoids have displayed the ability to inhibit carcinogenesis in animal models (5), including prostate cancer (6). However, in some experimental studies retinoids have enhanced carcinogenesis (7,8), and several human studies have found a direct association between retinol intake and risk of prostate cancer, particularly among men aged 70 years or

...no vedecká metóda je aj tak to najlepšie, čo máme!

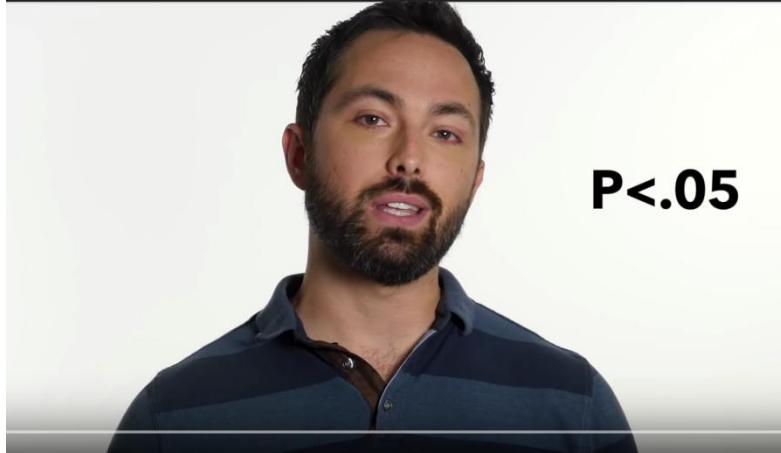
Vedci sa snažia o osvetu a nápravu, pomôžu:

- publikácie negatívnych výsledkov
- replikácie štúdií, retrakcia vyvrátených výsledkov
- dobrý dizajn experimentu, veľké vzorky, korekcie multi-testovania, atď.

A ako veľakrát sa potom  
mýlime v iných oblastiach  
života?



# Materiály:



Video: Is Most Published Research Wrong?

<https://www.youtube.com/watch?v=42QuXLucH3Q>

Fake chocolate study: <https://io9.gizmodo.com/i-fooled-millions-into-thinking-chocolate-helps-weight-1707251800>

Online hra (od vedy k propagande):

<https://getbadnews.com/#intro>

Ioannidis: Why most published research findings are false Part I

<https://www.youtube.com/watch?v=wM0vXVclQZg>

## A Quick Puzzle to Test Your Problem Solving

By DAVID LEONHARDT and YOU JULY 2, 2015

A short game sheds light on government policy, corporate America and why no one likes to be wrong. [RELATED ARTICLE](#)

### Here's how it works:

We've chosen a rule that some sequences of three numbers obey — and some do not. Your job is to guess what the rule is.

We'll start by telling you that the sequence 2, 4, 8 obeys the rule:

**Obeys the rule**

Now it's your turn. Enter a number sequence in the boxes below, and we'll tell you whether it satisfies the rule or not. You can test as many sequences as you want.

Enter your first sequence here:

Pokus na sebe:

[https://www.nytimes.com/interactive/2015/07/03/upshot/a-quick-puzzle-to-test-your-problem-solving.html?\\_r=1&abt=0002&abg=1](https://www.nytimes.com/interactive/2015/07/03/upshot/a-quick-puzzle-to-test-your-problem-solving.html?_r=1&abt=0002&abg=1)

