Quiz

*The average of tooth decay of a random sample of 101 clients of a dental office was 10 and standard deviation S=3 (Z_{α}=1.96, α=0.05). Compute the 95% confidence interval for the mean.

A. 10.6

B. 9.41-10.59

C. 9.4

D. 9.39-10.51

E. 9.5-10.7

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*The frequency of tooth gangrene in a random sample of 100 subjects was 50 (Z_{α}=1.96, α=0.05). Compute the 95% confidence interval for the frequency of tooth gangrene.

A. 49.41-50.59

B. 0.402-0.598

C. 0.200-0.800

D. 45-55

E. It cannot be computed from these data

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*We want to estimate the frequency of mouth cancer in population with age higher than 60 years old. In a study with 10.000 participants, 300 had mouth cancer. Which is the correct 95% confidence interval for the frequency of mouth cancer in population over 60 years old?

A. 0.28-0.35

B. None of the above

C. 0.027-0.033

D. 28-32

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A. 0.02-0.04

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D. 2.8-3.2

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*We want to estimate the frequency of mouth cancer in population with age higher than 60 years old. In a study with 1000 participants, 30 had mouth cancer. Which is the correct 80% confidence interval for the frequency of mouth cancer in population over 60 years old (Z critical=1.29)?

A. 0.01-0.05

B. None of the above

C. 0.029-0.031

D. 0.023-0.037

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Scenario – Amputations

- The aim of the study was to assess the frequency of amputations due to diabetes in Romania. Data from **all hospitals** in the country in 5 years were analyzed.

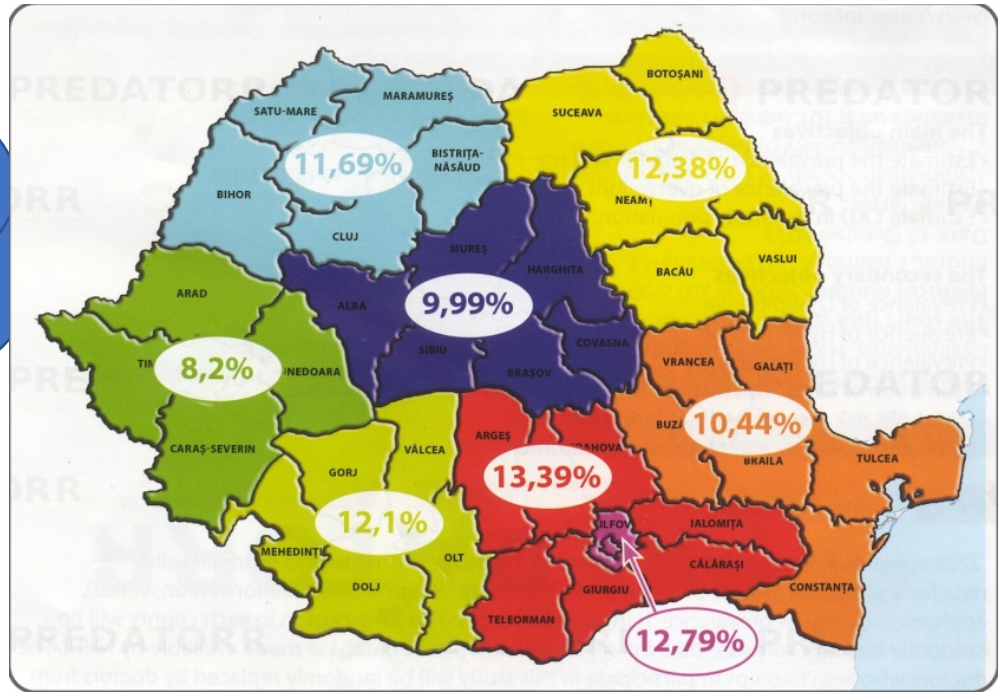
- The total number of amputation due to diabetes was 24 312, 70.3% with diabetes mellitus type 2.
- **Every 21 minutes there is an amputation due diabetes**

Veresiu IA, Iancu SS, Bondor C. Trends in diabetes-related lower extremities amputations in Romania—A five year nationwide evaluation. Diabetes Research and Clinical Practice. August 2015;109(2):293–8.

Scenario – Predatorr study

- Aim: first study for the prevalence of diabetes in Romanian population
- Sampling method:
  - stratified,
  - cross-sectional,
  - clusterized
  - Random selection.
- 2728 participants
- Prevalence of diabetes was 11.6%

A sample, need inference: confidence intervals



Studiul Naţional privind Prevalenţa Diabetului, Prediabetului, Supraponderii, Obezităţii, Dislipidemiei, Hiperuricemiei şi Bolii Cronice de Rinichi (PREDATORR)
Mota M, Popa SG, Mota E, Mitrea A, Catrinoiu D, Cheta DM et al. Prevalence of diabetes mellitus and prediabetes in the adult Romanian population: PREDATORR study. Journal of Diabetes 2015; doi: 10.1111/1753-0407.12297

*We want to estimate the prevalence of diabetes in Romania. In a study with 2728 participants the frequency of diabetes was 11.6%

persons. Which is the correct 95% confidence interval for the frequency of diabetes in population of Romania?

A. 10.99-12.21

B. None of the above

C. 0.11-0.12

D. 0.096-0.136

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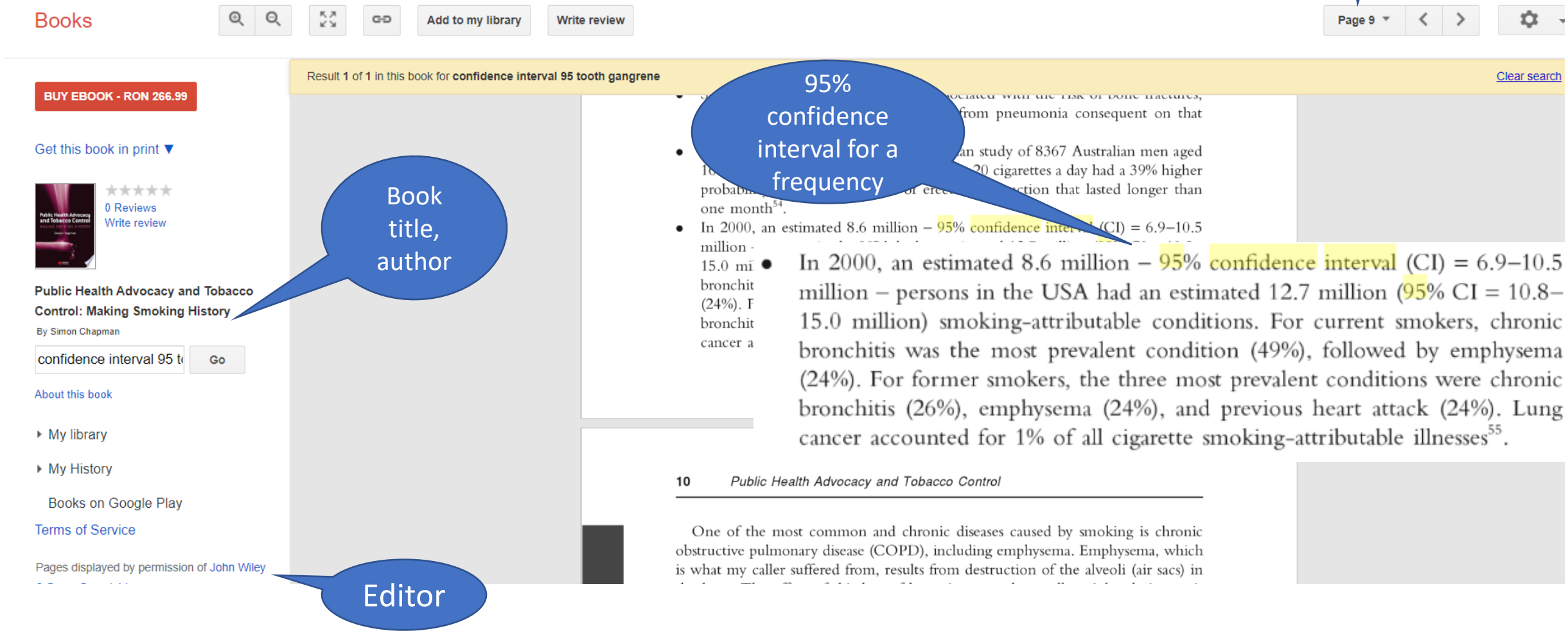
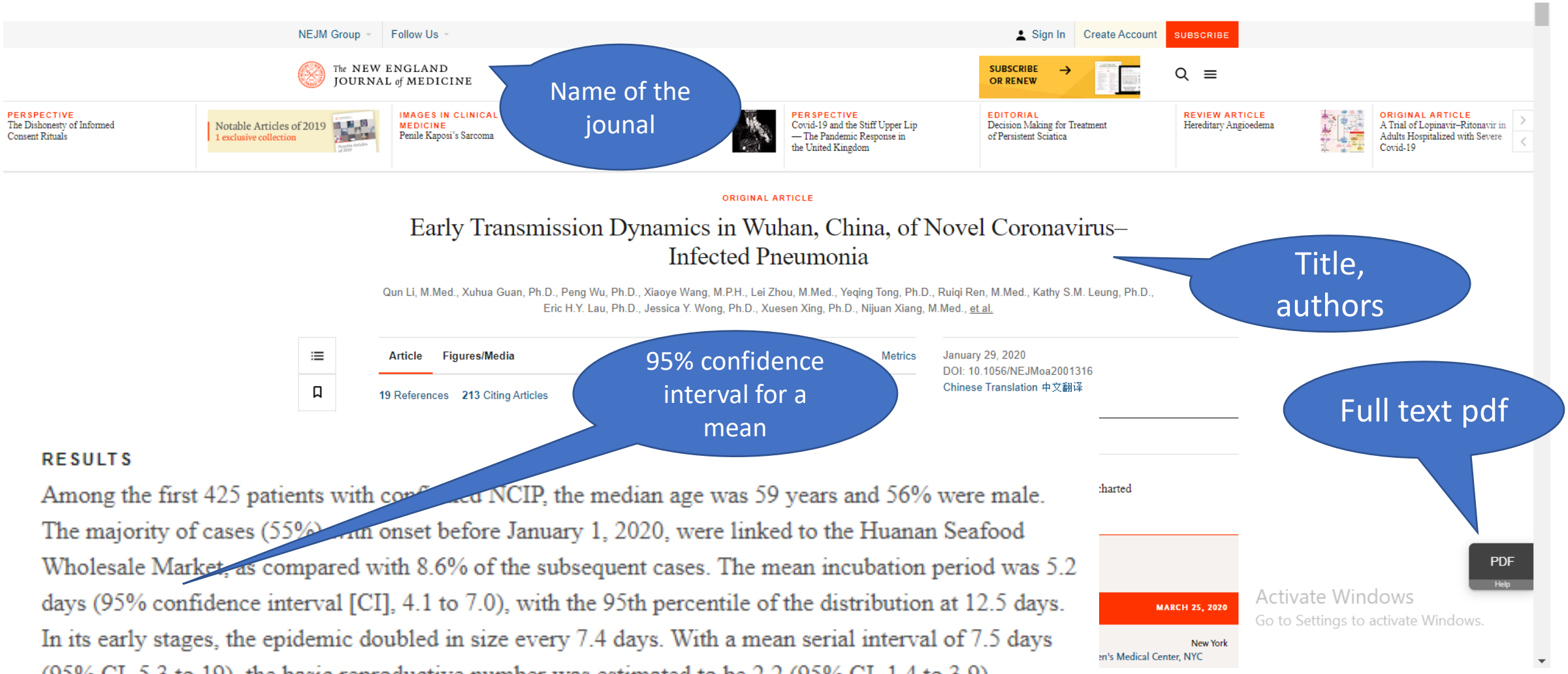
Example from scientific literature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