



Медицинские информационные технологии в здравоохранении

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Графические изображения

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ОПОРНЫЙ
ОБРАЗОВАТЕЛЬНЫЙ
ЦЕНТР

- Визуализация
- Пример из жизни
- Определение
- Паттерны
- Зависимости
- Дизайн
- ГОСТ
- Классификация



Визуализация



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Anatomy of the Bite

Explore how female mosquitoes are able to pierce human skin, draw blood, and transmit the diseases that make them so notoriously dangerous to human health.

Mosquitoes do not inherently carry the diseases they transmit. To become infectious, a mosquito must first feed from an infected host. During feeding, the mosquito will ingest the disease-causing pathogens contained within the host's blood. Now infectious, the mosquito is able to transmit pathogens to the next host it bites.

The transmission of pathogens occurs at the start of a blood meal. When the mosquito begins to feed, it injects some of its own saliva into the host. The saliva contains anticoagulants and anti-inflammatory substances that prevent the host's blood from clotting, making feeding easier. When the mosquito is infectious, pathogens will also travel into the host during this saliva-injecting interaction, effectively transmitting the disease.



Finding a Host
Mosquitoes are believed to detect their prey through a combination of visual, olfactory, and thermal cues.

Sensory Skills
Mosquitoes visually spot prey, smell carbon dioxide exhaled by humans & animals, and thermally detect body heat.

Fascicle
The fascicle is a bundle of 6 needle-like stylets that collectively function to pierce through skin and suck blood.

Labium
The labium is the large, scaly lip that protects the fascicle. During feeding, the labium folds back and remains perched on the skin's surface.

PATHWAY to INFECTION

- 1 Mosquito feeds on a disease-infected host.
- 2 The host's infected blood travels to the midgut.
- 3 Pathogens from the blood enter the mosquito's circulatory system.
- 4 The pathogens reach the salivary glands.
- 5 When the mosquito bites again, it will inject its saliva into the new host, transmitting the pathogens.

PATHOGENS

Pathogens are disease-causing agents. Mosquito-borne diseases are caused by a variety of pathogens, including bacteria, viruses, and microorganisms. The three viruses shown below are all spread by mosquitoes & are globally significant threats to human health.



DENGUE

The dengue virus causes dengue fever, a tropical disease with flu-like symptoms. In mild cases, symptoms can be slight or unnoticeable. In more serious cases, the disease develops into dengue hemorrhagic fever (DHF) or DSS, patients can experience life-threatening fever, rash, joint pain, bleeding, and shock. There is no specific treatment for dengue fever, but treatment for dengue fever is available.



CHIKV

The chikungunya virus, or CHIKV, causes chikungunya, a disease that is debilitating but rarely fatal. Symptoms primarily include fever and joint pain, while muscle pain, headache, fatigue, and rash may also occur. There is no vaccine to prevent chikungunya, or any specific medicines to treat the infection. In areas at risk for the virus, the current best prevention method is to avoid mosquito bites.



ZIKA

The Zika virus is notable for its connection to microcephaly and Guillain-Barré syndrome. Those with neurological complications make Zika a hot topic for research. Zika infection usually does not cause symptoms, but patients can have fever, rash, joint pain, and joint pain. Zika is transmitted primarily by mosquitoes, but this also can be spread through sexual contact or blood. There is currently no vaccine or specific medicine available.

Itch
The itchy bumps, or wheals, left by bites are the result of an allergic reaction to mosquito saliva.

Dermis

Artery

Vein

Subcutaneous (fat) tissue

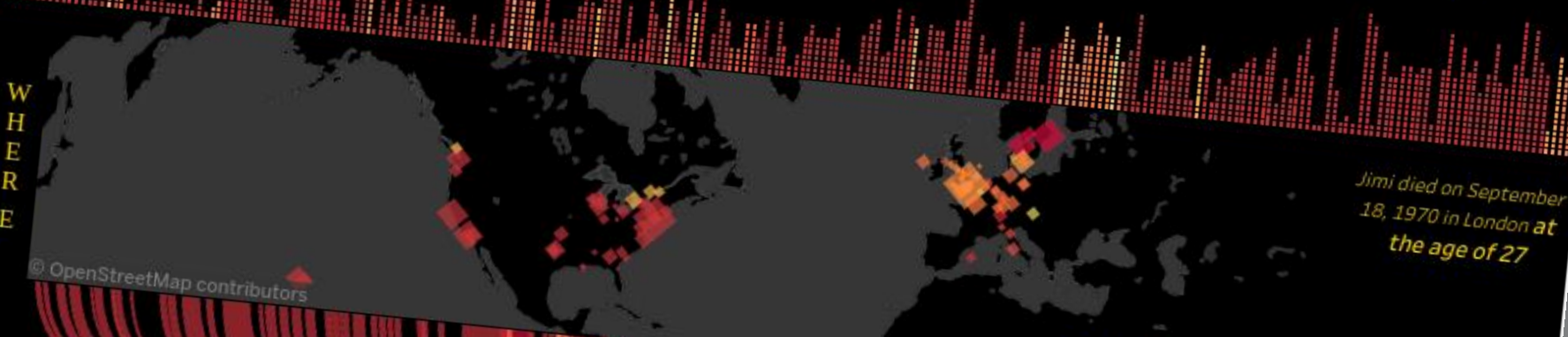
- Come On
- Ezy Ryder
- Freedom
- Killing Floor
- Tax Free
- Machine Gun
- Are You Experienced
- Message to Love
- Free Jam
- Sgt. Pepper
- Lover Man
- The Sunshine of Your Love
- Stone Free
- The Wind Cries Mary
- I Don't Live Today
- Wild Thing
- Spanish Castle Magic
- Voodoo Child (Slight Return)
- Fire
- Hey Joe
- Purple Haze

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Timeline >



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Jimi died on September 18, 1970 in London at the age of 27

136 Cities

Each map mark is a city Jimi played live.

The flow chart traces from each Country to an individual City

1,829 Songs Played

WHAT SONGS

<--- This BAR CHART shows the songs Jimi played most often live.
HOVER OVER a song to see when Jimi played it on the timeline at the top of the viz and click on the bar to find a link to YouTube to hear each song! (Free Jam excluded)

14 Countries

HOVER OVER the bar chart to highlight cities and gig-dates on the timeline.



Пример из жизни



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Рис. 1-69. Ранжирование территорий Республики Татарстан по показателю среднегодовой заболеваемости среди детей до первого года жизни за 2015-2019 г.г. (на 100 тыс. населения)

Диаграмма



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Диаграмма – графическое представление данных, позволяющее быстро оценить соотношение нескольких величин. Представляет собой геометрическое символическое изображение информации с применением различных приёмов техники визуализации.

Диаграмма



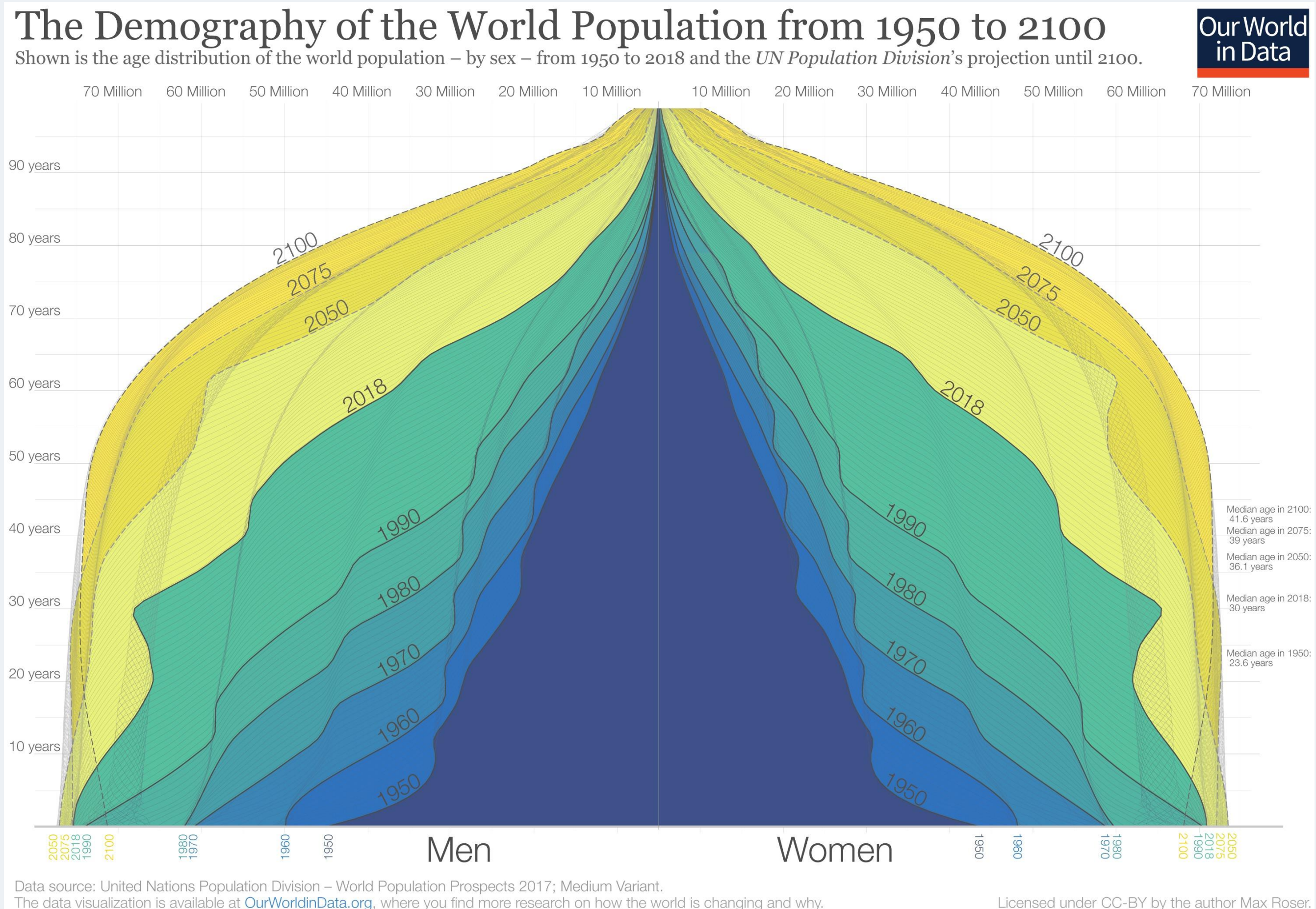
Паттерны



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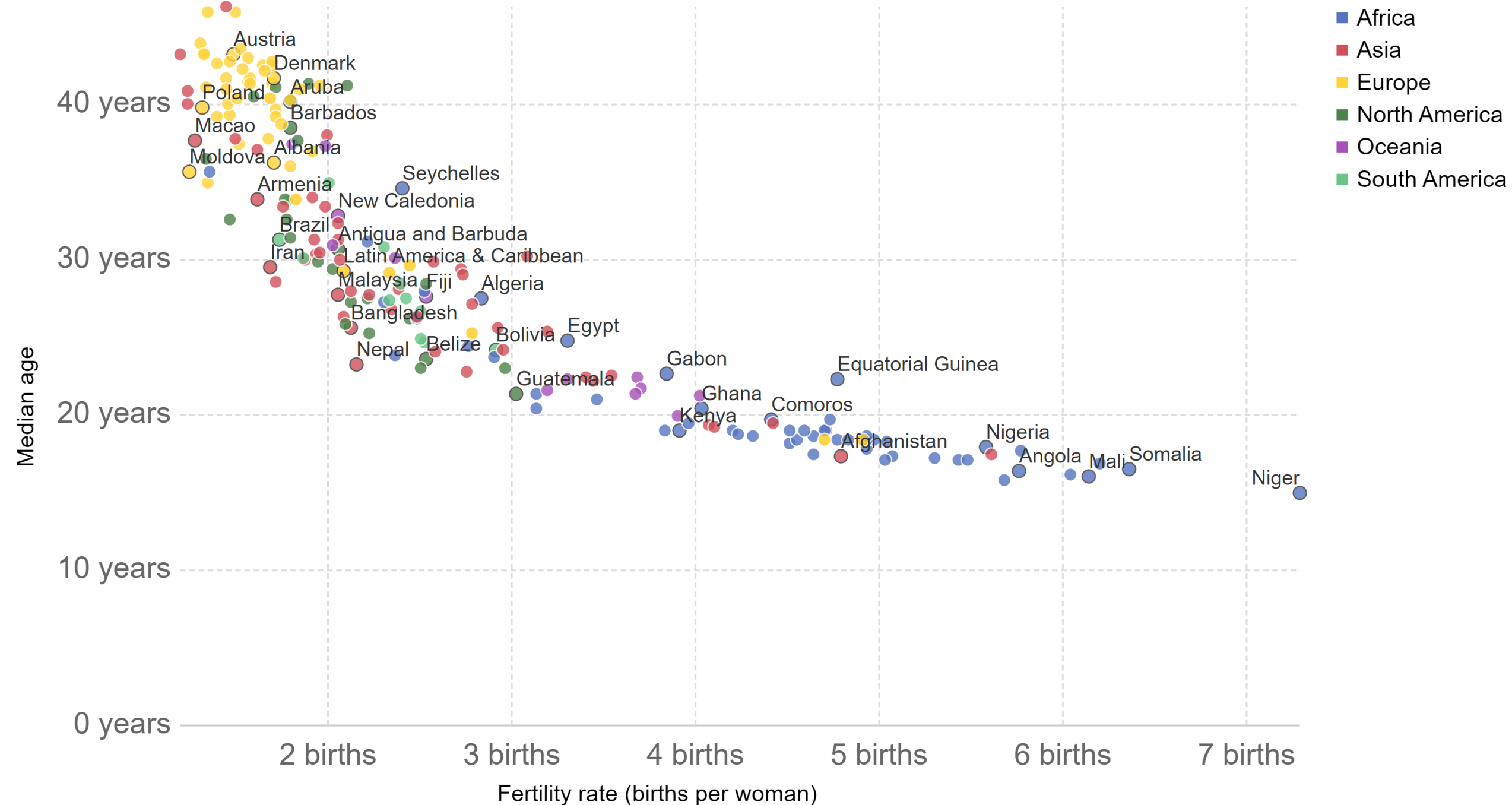
ЗАВИСИМОСТИ



Median age vs. children per woman, 2015

Our World
in Data

The median age divides the population in two parts of equal size: that is, there are as many persons with ages above the median as there are with ages below the median. Fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year.



Source: UN Population Division (2017); World Bank

CC BY





Coronavirus (COVID-19) and tobacco use



TOBACCO USE IN EUROPE

Around **186 million adults** in the WHO European Region use tobacco.



186 million adults

119 million males

67 million females

About 14 in every 100 boys and 12 in every 100 girls **aged 13-15** in Europe use tobacco.



14%
boys



12%
girls

USING TOBACCO MAY INCREASE YOUR RISK OF GETTING THE CORONAVIRUS



Putting a tobacco product to your lips means your fingers come close to your face, which can spread the virus to your mouth, nose or eyes.



Tobacco use is often a social activity, so if you use tobacco with other people, you risk infecting each other with the virus.



Waterpipe users often share the same pipe - the virus can then be more easily spread from person to person.

THE EFFECT OF THE CORONAVIRUS CAN BE WORSE FOR PEOPLE WHO USE TOBACCO

- Tobacco use leads to disease and disability and harms nearly every organ of the body, including the lungs.
- The coronavirus attacks the lungs - if your lungs are already damaged by tobacco use, the effects probably will be worse.
- Tobacco affects your immune system, meaning you're less able to fight off infections.



INHALING FUMES FROM OTHER PEOPLE'S TOBACCO USE - SECOND-HAND SMOKE - PUTS YOU AT RISK OF GETTING RESPIRATORY INFECTIONS

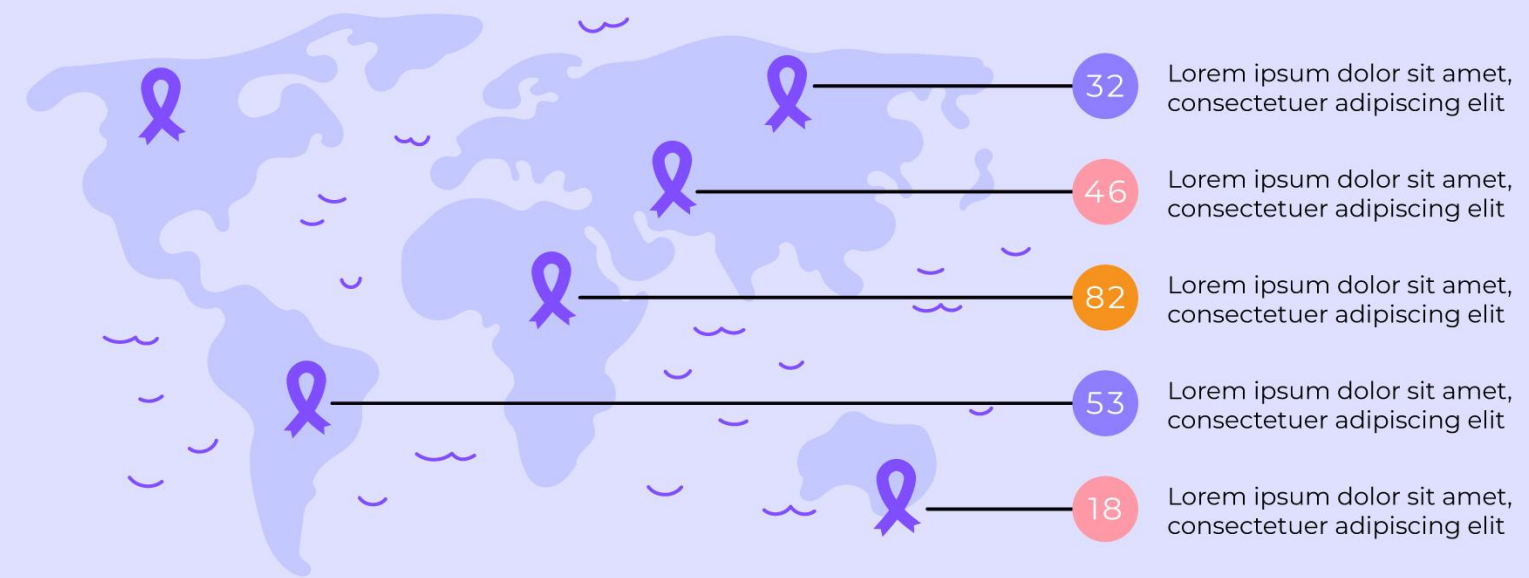


Second-hand smoke is still a big problem in Europe, with people - especially children - inhaling other people's smoke in cars, homes and other public places.

QUIT TOBACCO USE THERE ARE MANY REASONS FOR THIS - CORONAVIRUS IS ONE

- Quitting helps your lungs and heart to work better from the moment you stop.
- Quitting can help you to respond to the virus with milder symptoms and recover quicker.
- Quitting helps you protect loved ones, especially children, from exposure to second-hand smoke.
- Quitting is easier to plan and achieve if you use evidence-based guidance, such as WHO's "A guide for tobacco users to quit".

CANCER INFOGRAPHIC



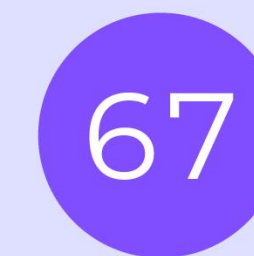
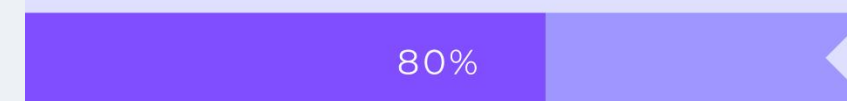
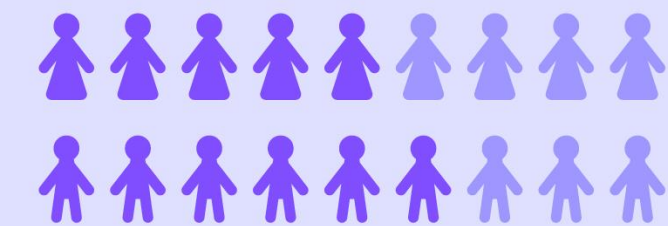
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ГОСТ 7.32-2017

МЕЖГОСУДАРСТВЕННЫЙ СТАНДАРТ

Система стандартов по информации, библиотечному и издательскому делу

ОТЧЕТ О НАУЧНО-ИССЛЕДОВАТЕЛЬСКОЙ РАБОТЕ

Структура и правила оформления

System of standards on information, librarianship and publishing. The research report. Structure and rules of presentation



Пример обозначений



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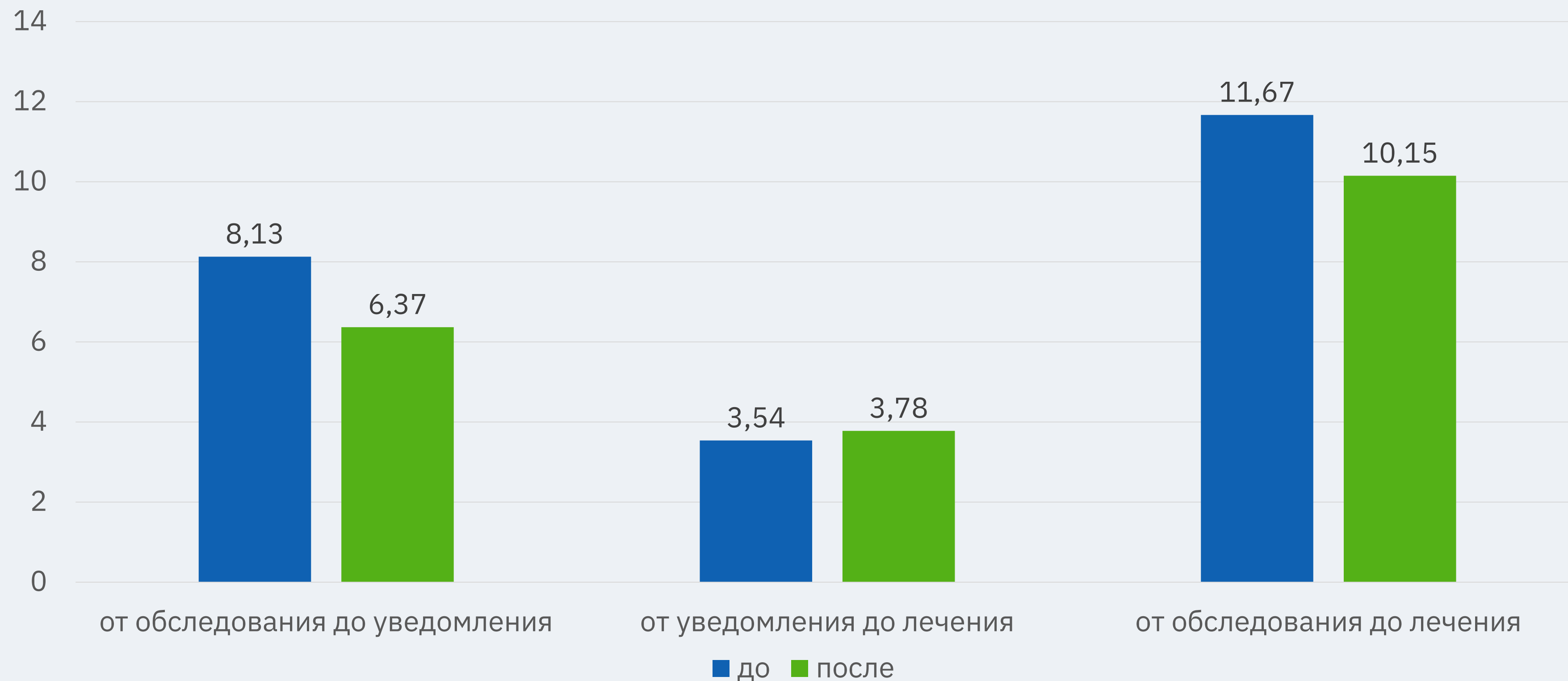
Рис. 1

Рисунок 1 – Заболеваемость трудоспособного населения



Результаты исследования влияния ПО

количество дней



Геометрические фигуры

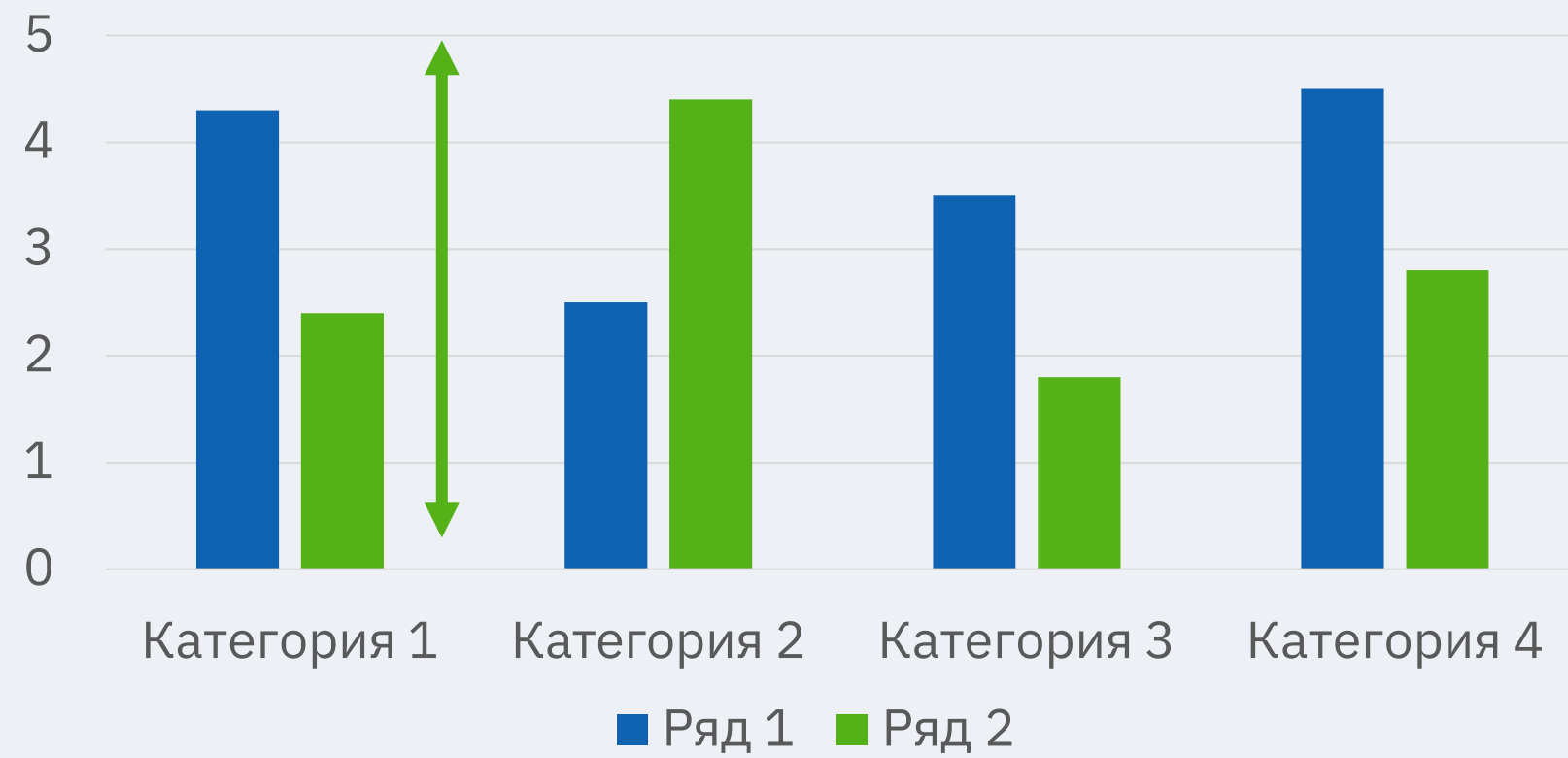


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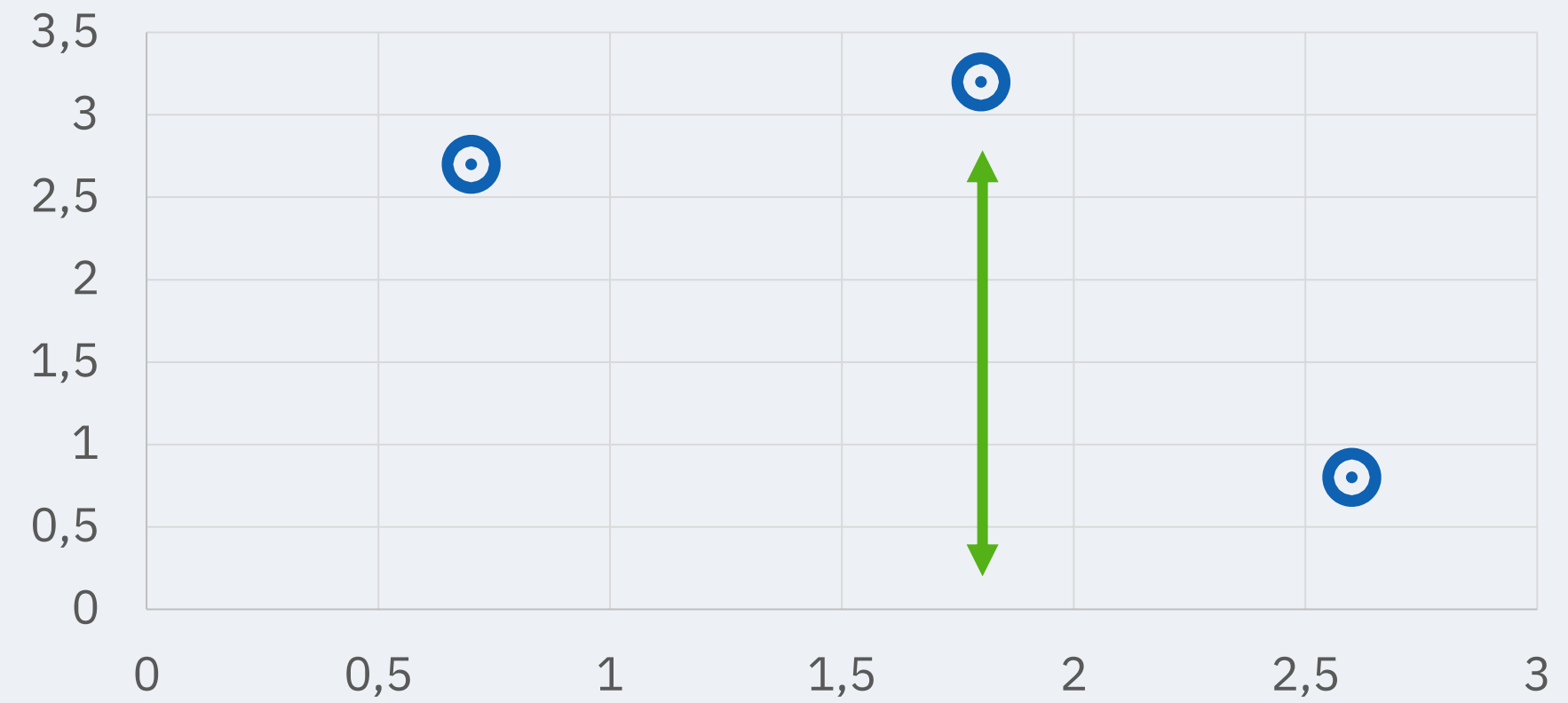
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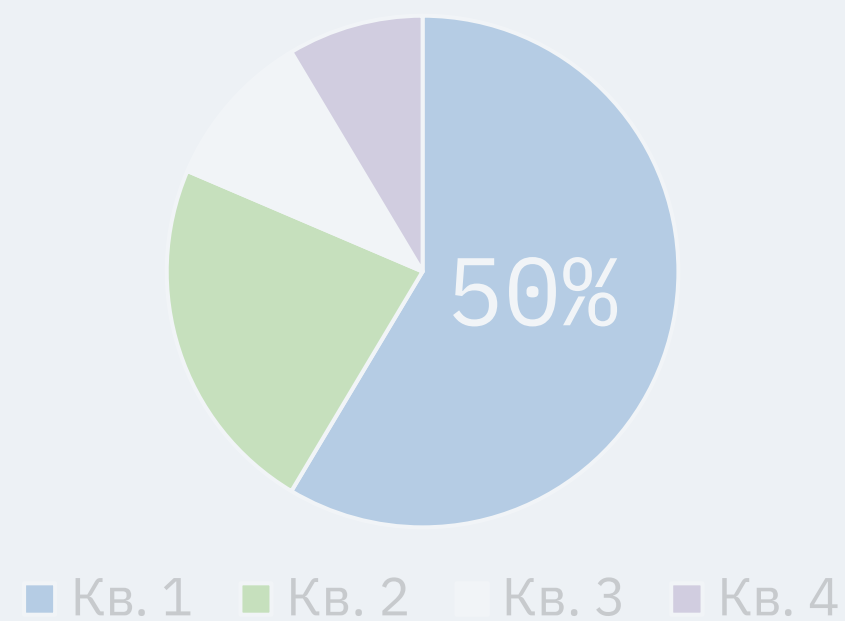
Название диаграммы



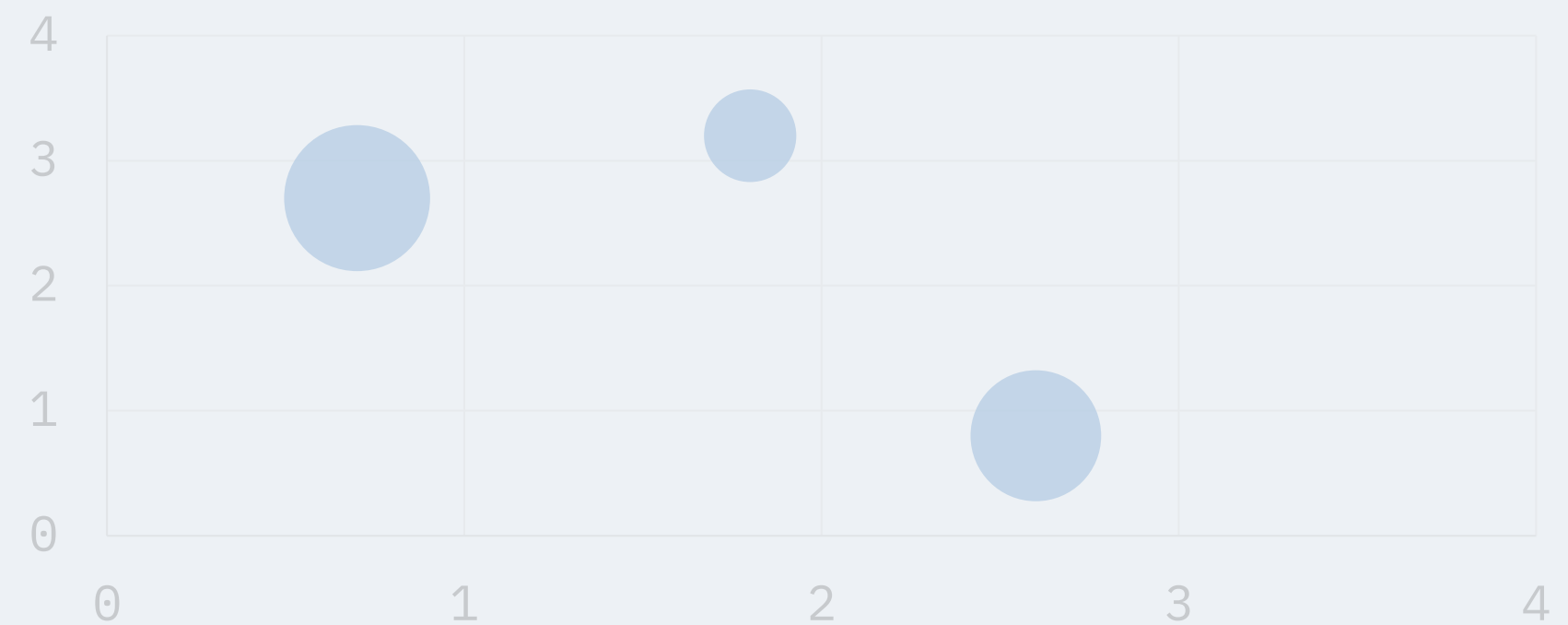
Значения Y



Продажи



Значения Y



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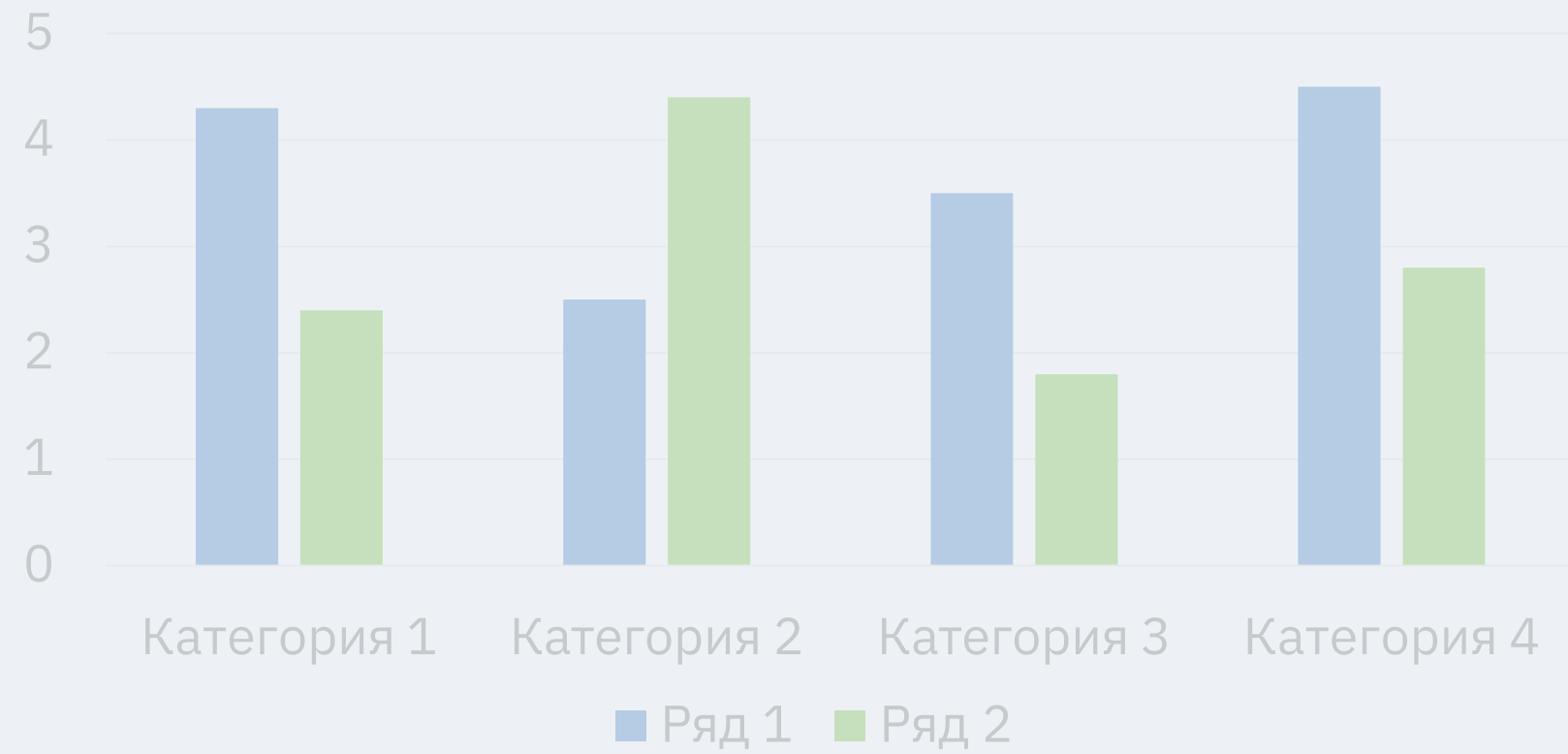


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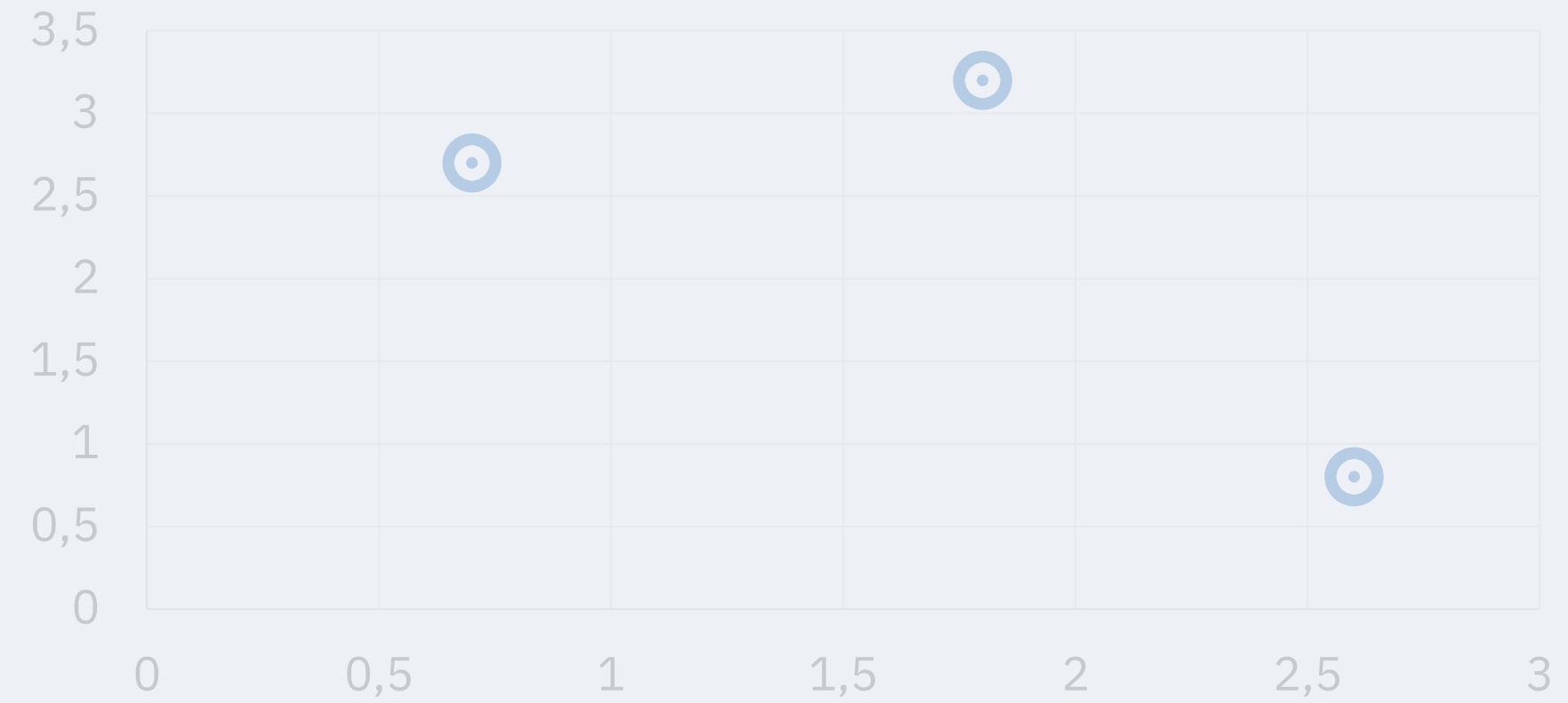
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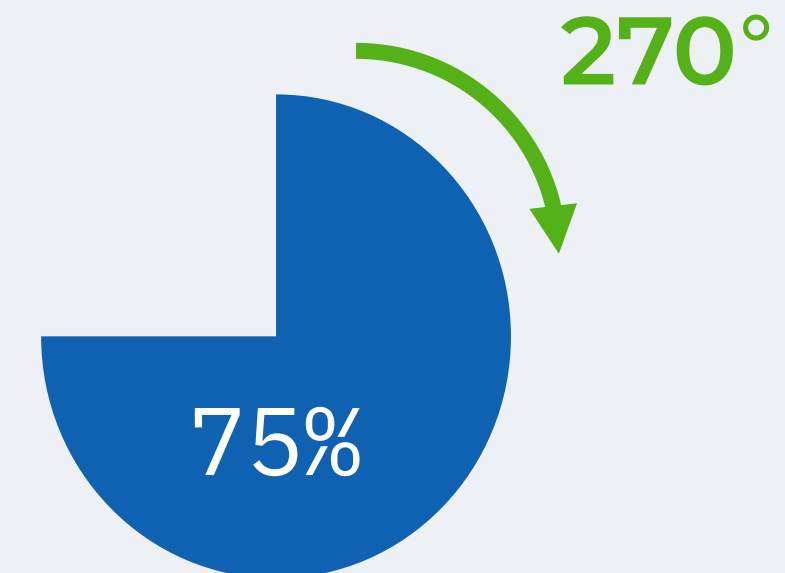
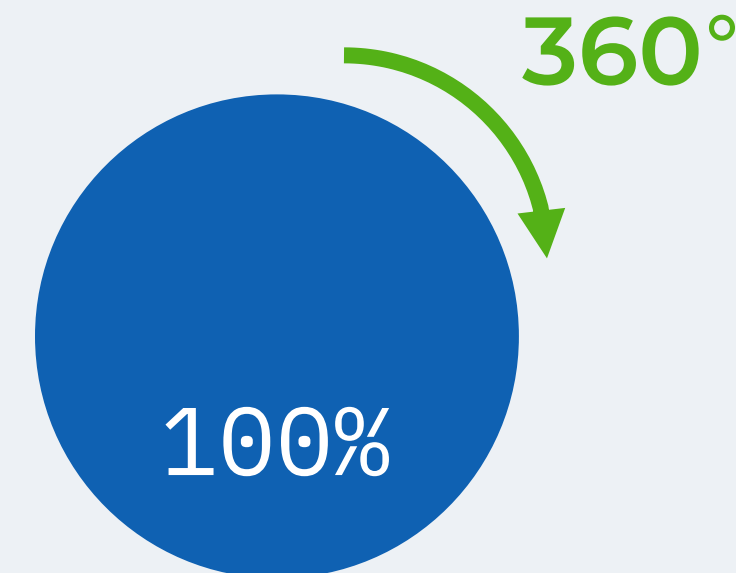
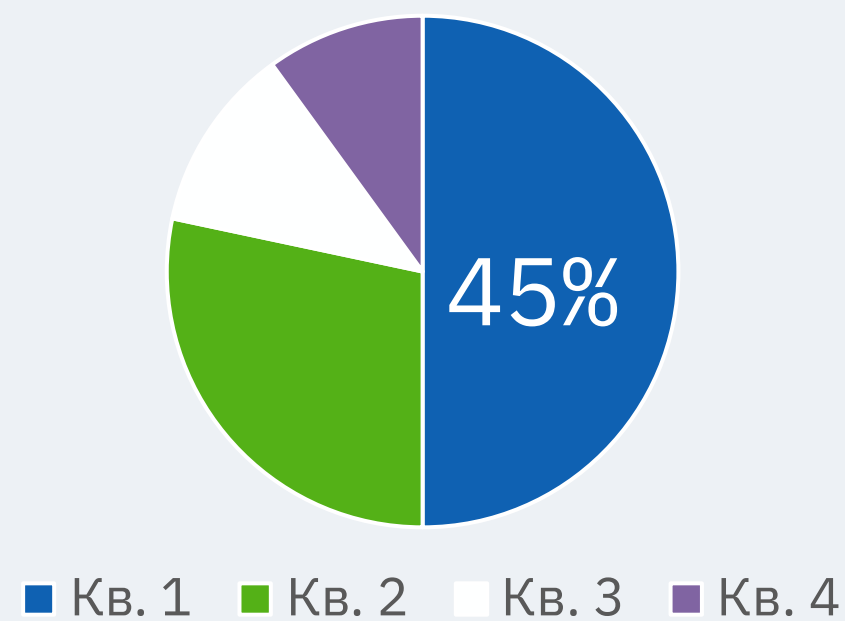
Название диаграммы



Значения Y



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Геометрические фигуры

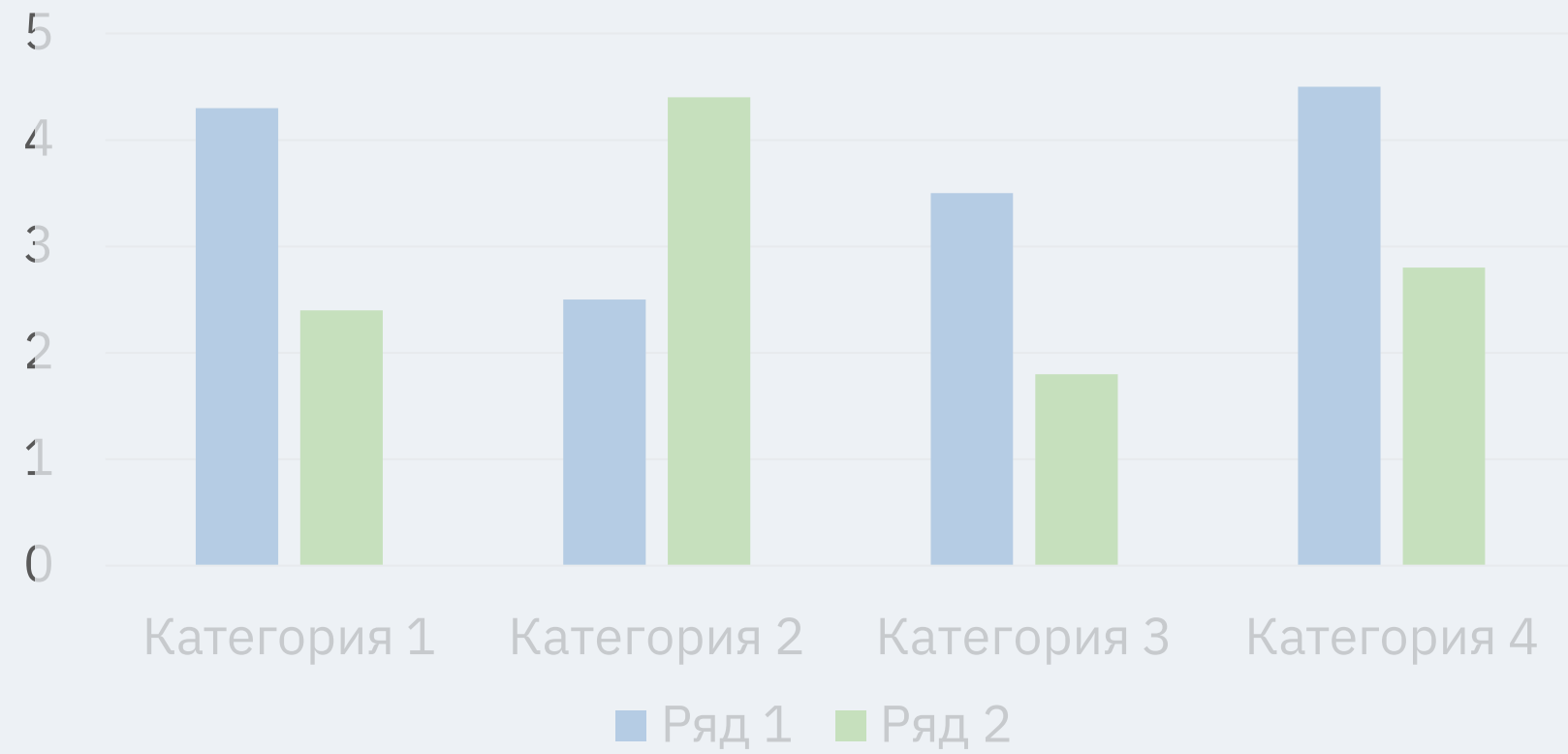


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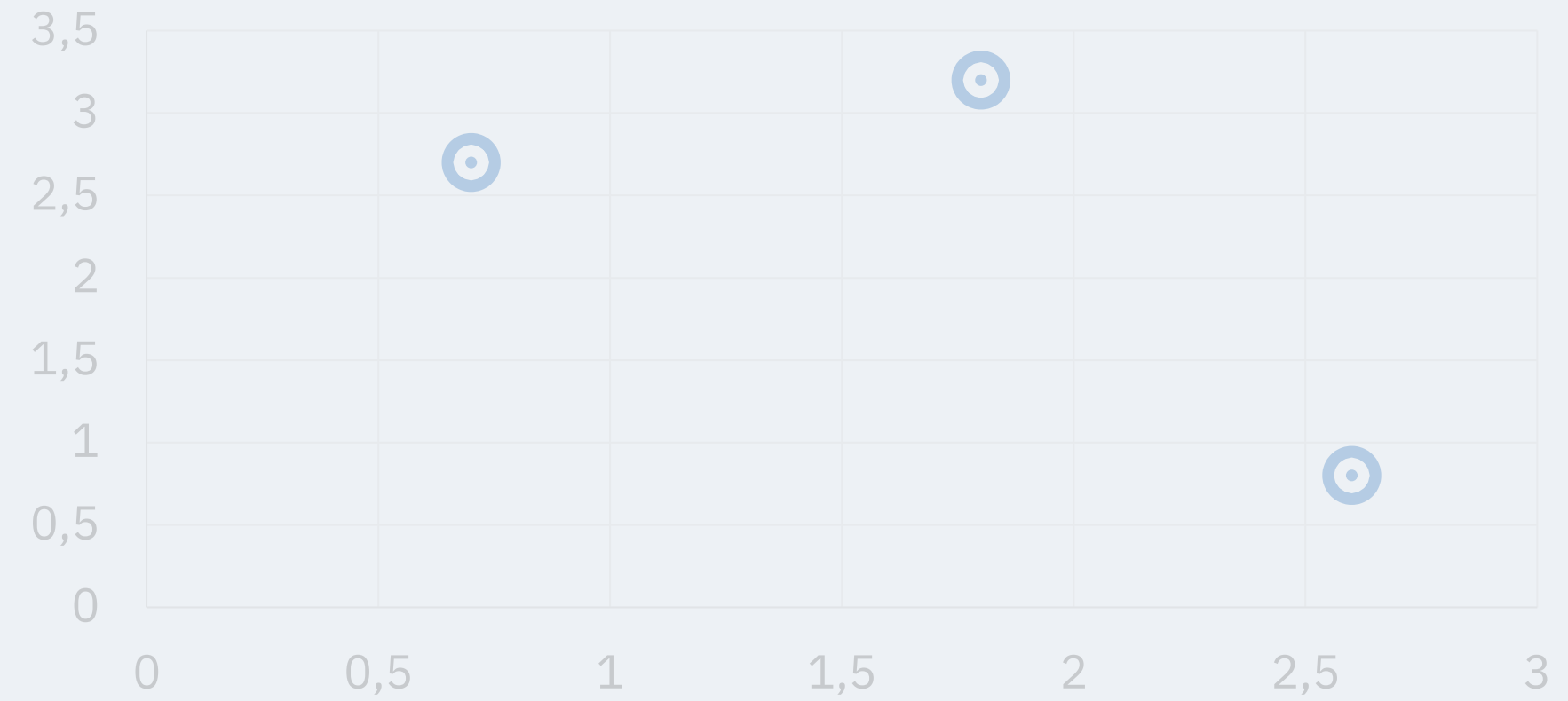
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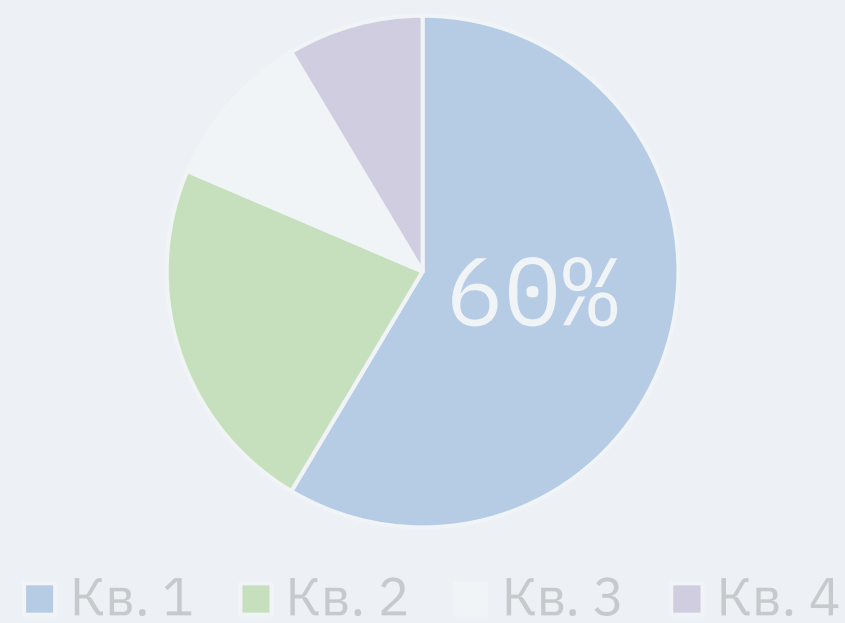
Название диаграммы



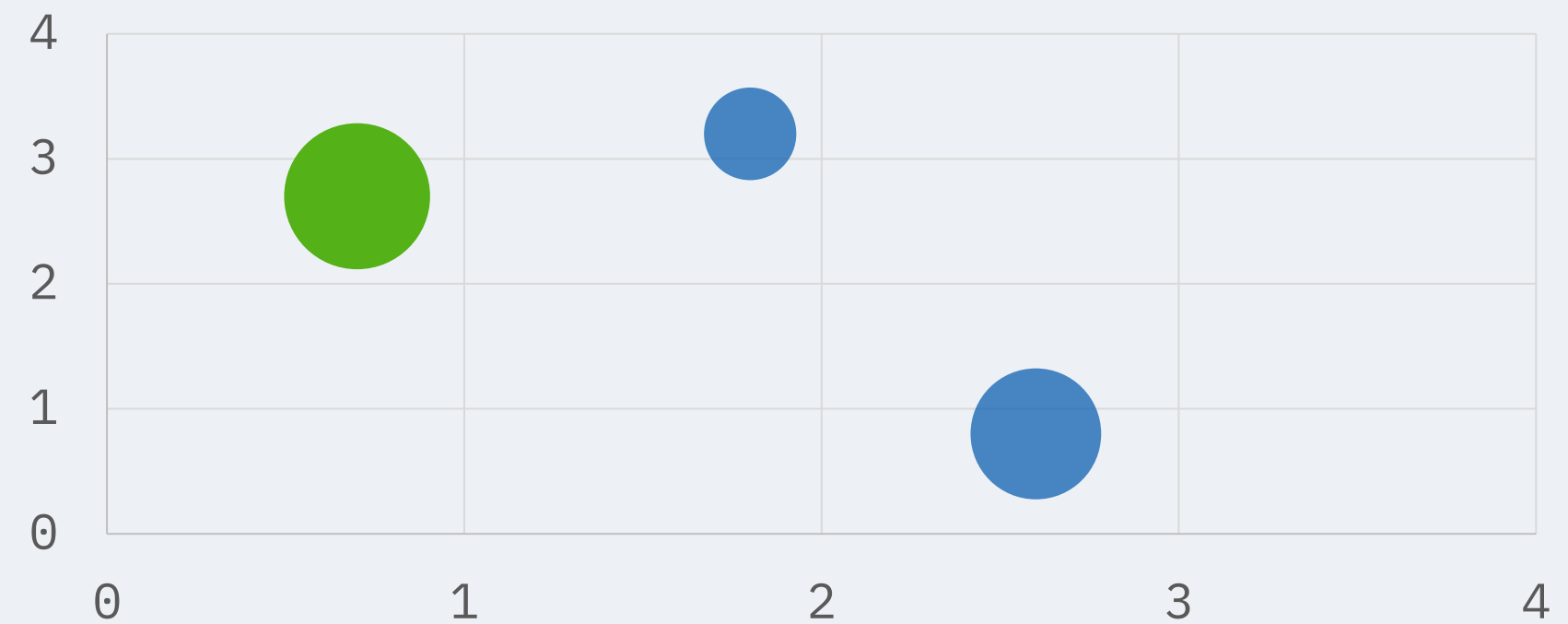
Значения Y



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Значения Y



Виды графических изображений



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Сравнение

Часть и целое

Изменения во времени

Распределение

Корреляция или связь

Отклонение или разница

Этапы, процессы, потоки

Иерархия

Составления профилей

Геоданные



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Спасибо
за внимание