



Seed oils, obesity and testosterone levels

- Lukas Presti

Problem Statement

- "Is there a correlation between seed oil consumption, rising obesity rates, and declining testosterone levels in men?"
- **Why It Matters:**
 - Seed oils dominate modern processed foods.
 - Parallel trends: Obesity , Testosterone .
 - Societal implications: Health risks, behavioral changes.

Methodology

- **Tools Used:**

- React.js for the frontend.
- Recharts for interactive graphs.
- React-Bootstrap for UI components.

- **Data Sources:**

- Quick history of seed oils - <https://pabook.libraries.psu.edu/literary-cultural-heritage-map-pa/feature-articles/dr-ottos-amazing-oil>
- Dietary trends - <https://pmc.ncbi.nlm.nih.gov/articles/PMC8805510/#s3>
- Obesity trends - <https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity>
- obesity linked to heart disease - <https://pmc.ncbi.nlm.nih.gov/articles/PMC3250069/>
- obesity linked to lower testosterone in men - <https://pmc.ncbi.nlm.nih.gov/articles/PMC3955331/#sec1-2>

Steps:

1. Set up React app: `npx create-react-app`.
2. Added dependencies:
3. `bash`
4. Copy
5. `npm install recharts, react-bootstrap, rc-slider`
6. Built components:
 - `SeedOilGraph.js`, `ObesityGraph.js`, etc.
7. Integrated data and state management (`useState`).
8. Styled with CSS for a modern look.

IDE Setup (Next Slide):

- Folder structure, extensions (ESLint, Prettier).

IDE Setup and dependencies

The screenshot shows the Visual Studio Code (VS Code) editor interface. The Explorer panel on the left displays the file structure of the 'seed-oil-story' project, including folders like 'node_modules', 'public', and 'src', and files like 'App.css', 'App.js', 'App.test.js', 'CombineGraph.js', 'CorkboardLayout.css', 'index.css', 'index.js', 'logo.svg', 'ObesityGraph.js', 'reportWebVitals.js', 'SeedOilGraph.js', 'SeedOilObesityGraph.js', 'setupTests.js', 'styles.css', 'TestosteroneGraph.js', '.gitignore', 'package-lock.json', 'package.json', and 'README.md'. The main editor area shows the 'package.json' file with the following content:

```
{
  "name": "seed-oil-story",
  "version": "0.1.0",
  "private": true,
  "dependencies": {
    "@emotion/react": "^11.14.0",
    "@emotion/styled": "^11.14.0",
    "@mui/material": "^6.4.7",
    "@testing-library/dom": "^10.4.0",
    "@testing-library/jest-dom": "^6.6.3",
    "@testing-library/react": "^16.2.0",
    "@testing-library/user-event": "^13.5.0",
    "bootstrap": "^5.3.3",
    "rc-slider": "^11.1.8",
    "react": "^19.0.0",
    "react-bootstrap": "^2.10.9",
    "react-dom": "^19.0.0",
    "react-scripts": "5.0.1",
    "react-zoom-pan-pinch": "^3.7.0",
    "recharts": "^2.15.1",
    "web-vitals": "^2.1.4"
  },
  "scripts": {
    "start": "react-scripts start",
    "build": "react-scripts build",
    "test": "react-scripts test",
    "eject": "react-scripts eject"
  },
  "eslintConfig": {
    "extends": [
      "react-app",
      "react-app/jest"
    ]
  },
  "browserslist": {
    "production": [
      ">0.2%",
      "not dead",
      "not op_mini all"
    ],
    "development": [
      "last 1 chrome version",
      "last 1 firefox version",
      "last 1 safari version"
    ]
  }
}
```

The status bar at the bottom indicates the current file is 'package.json' at line 22, column 5, with 2 spaces, UTF-8 encoding, and LF line endings. The bottom right corner shows the JSON language mode icon.

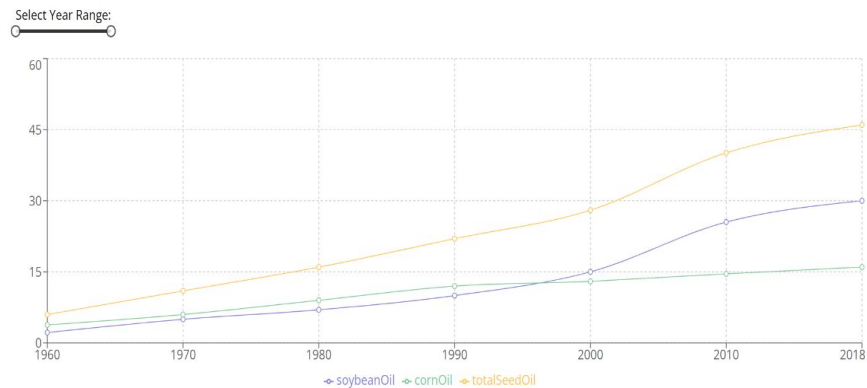
Key features

Interactive Graphs:

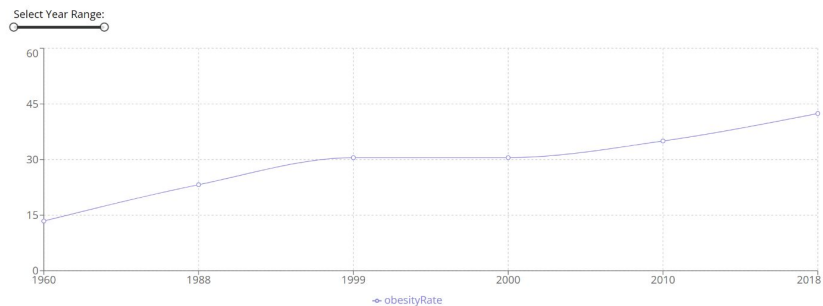
- Year-range sliders for dynamic filtering.
- Dual-axis charts for comparing metrics.
- Tooltips with detailed data points.

Example Graph (Next Slide):

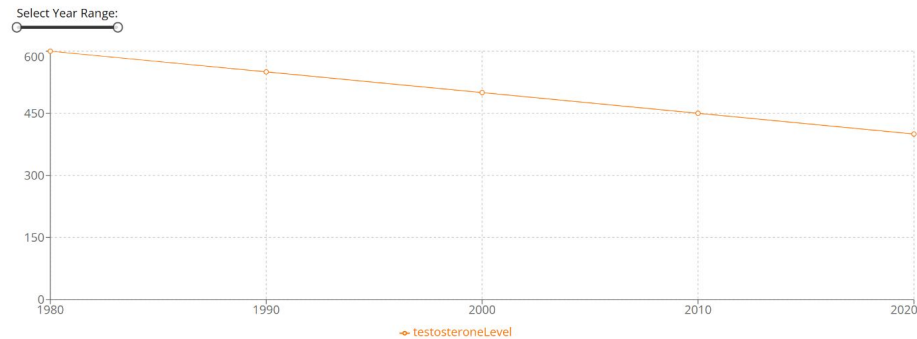
Seed Oil Consumption Over Time



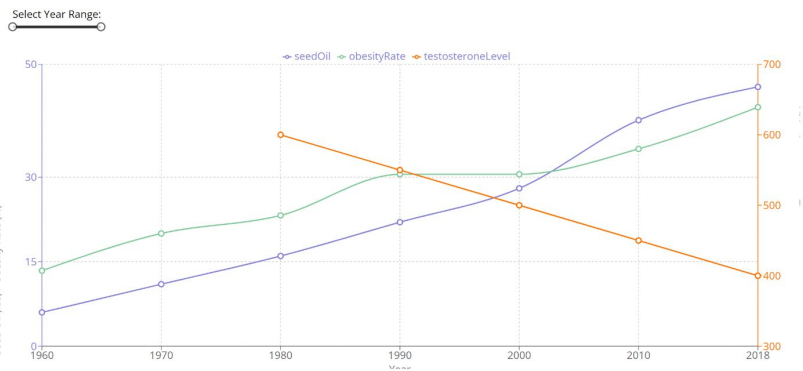
Obesity Rates Over Time






Testosterone Levels in Men Over Time



Seed Oil Consumption, Obesity Rates, and Testosterone Levels (Combined)



1. **Seed Oil Consumption** 
 - 6.0 lbs/person (1960) → 46.0 lbs/person (2018).
2. **Obesity Rates** 
 - 13.4% (1960) → 42.4% (2018).
3. **Testosterone Levels** 
 - 600 ng/dL (1980) → 400 ng/dL (2020).

Correlation:

- Strong parallel trends suggest a potential link.

1. **Data Scaling:**

- Solved with dual Y-axes for obesity (0–50%) vs. testosterone (300–700 ng/dL).

2. **State Management:**

- Slider updates using useState.

3. **Tooltip Customization:**

- Dynamic content based on hovered data points.

Code Snippet (Example):

javascript

// Dual-axis setup in CombinedGraph.js

```
<YAxis yAxisId="left" domain={[0, 50]} />
```

```
<YAxis yAxisId="right" domain={[300, 700]} />
```

Lessons Learn

- **Technical Skills:**

- React state management.
- Recharts for dynamic visualizations.
- Actually use github (Broke my project and had to restart)

- **Conceptual Takeaways:**

- Correlation \neq causation.
- Data storytelling requires clarity and context.