A “CHEAT-SHEET” FOR USING MICROSOFT EXCEL IN CLINICAL DATA ANALYTICS:

Tips and Tricks for the Athletic Trainer

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Disclosures

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Agenda

• Why Excel for Data Analysis?
• Other Software that’s Popular
• Data Life Cycle
• Data “Normalization”
• Excel for Data Entry
• Get our Hands Dirty with Excel

Why Excel?

• Released in 1985 by Microsoft
• Most important/widely used computer program in workplace
• Most “mis-understood” computer program in the workplace
• When should we use excel?

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[https://www.exceltrick.com/others/history-of-excel/](https://www.exceltrick.com/others/history-of-excel/)

WHAT IS EXCEL?

- Spreadsheet Software
  - Display data in "table" format
  - ROWS & COLUMNS

- Data Management Tool (non-SQL)
  - Simple Math
  - Advanced Statistics

- Interact with Data
  - Clean and Manipulate data

- Visualize Data
  - Better in 2000s (Big Data movement)
  - 1 million Rows 16K Columns

DATA LIFE CYCLE

- FIND THE DATA
- CAPTURE THE DATA
- STANDARDIZE & CLEAN THE DATA
- ANALYZE DATA
- REPORT DATA
- IMPACT CARE WITH NEW KNOWLEDGE

OTHER POPULAR SOFTWARE

- Tableau Software
  - Data Cleaning
  - Data Visualization
  - Advanced Statistics and Analytics
  - $$$

- Microsoft Power BI
  - Data Cleaning
  - Data Visualization
  - Easy Sharing of Reports
  - Advanced Stats/Analytics
  - Streaming Data IoT
  - $$$

- Sisense
  - Data Visualization
  - For Advanced Users
  - Advanced Analytics
  - $$$
DATA NORMALIZATION

GENERAL RULES
- No Duplicate Columns
- No Duplicate Rows
- Single Relevant Value in Each Cell
- Each Row is One Observation

SINGLE SOURCE
- Primary Key
- Athlete vs. Injury
- One - Many Relationships

MUL TIPLE SOURCE
- Foreign Key
- Identifier that links observations across sheets

THANK YOU!
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