

Using the Libraries during COVID-19

Four campus libraries are open for Twin Cities students, faculty, and staff with valid U Cards. Hours are limited. Other libraries may be open [by appointment](#). (Last updated Nov. 23, 2020)

Boolean Operators: A Cheat Sheet

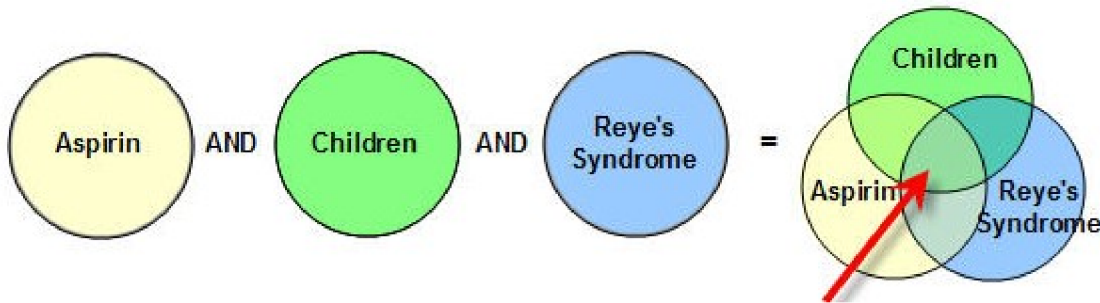
Boolean logic (named after mathematician George Boole) is a system of logic to designed to yield optimal search results. The Boolean operators, AND, OR, and NOT, help you construct a logical search. Boolean operators act on sets -- groups of records conta

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The circle diagrams that help illustrate the relationships between the sets used in Boolean logic were named after another mathematician, John Venn. (The shading represents the outcome of the Boolean operation.)

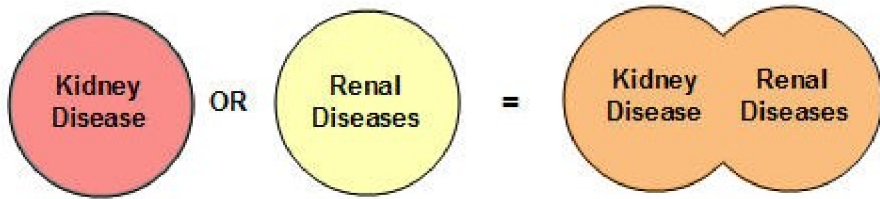
THE BOOLEAN "AND"

When terms/concepts are combined with the **AND** operator, retrieved records must contain all the terms. For example: "Does taking aspirin cause Reye's Syndrome in children?" This will retrieve citations that discuss all three concepts in each article. The more concepts you **AND** together, the fewer records you will retrieve.



THE BOOLEAN "OR"

The Boolean operator **OR** allows you to broaden a concept and include synonyms. For example, *kidney disease OR renal diseases* will retrieve citations using either (or both) terms. This expands your search by retrieving citations in which either or both terms appear. The more concepts or keywords you **OR** together, the more records you will retrieve.



THE BOOLEAN "NOT"

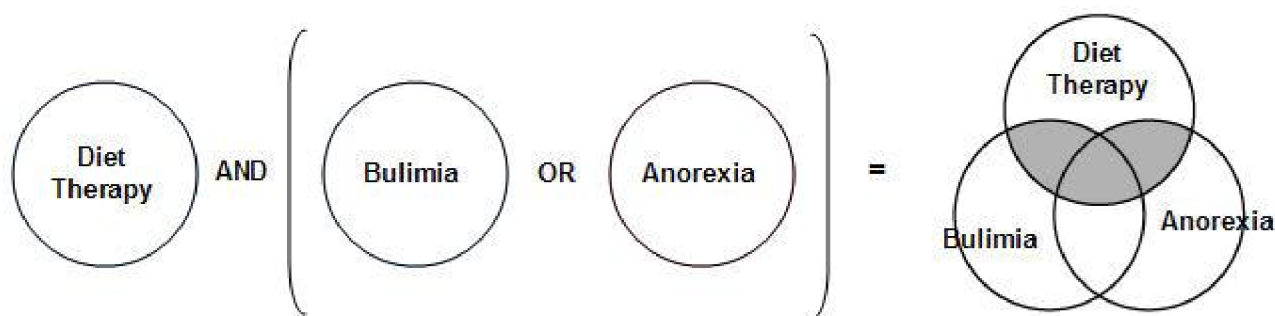
The final Boolean operator **NOT** allows you to exclude concepts not relevant to your search. For example, you could search multi-infarct dementia by using *Dementia NOT Alzheimer's*.



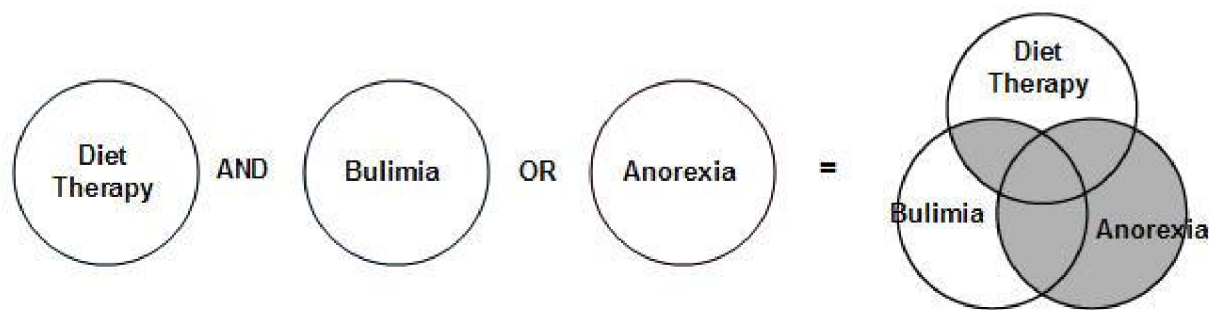
But be careful using this because you would eliminate records discussing both types of dementia, as all articles discussing Alzheimer's are eliminated.

MIXING BOOLEAN OPERATORS -- "NESTING"

Nesting, or mixing the Boolean operators, is a way to combine several search statements into one comprehensive search statement. Use parentheses () to separate keywords when you are using more than one operator and three or more keywords. The order in which the operations (**AND**, **OR** , **NOT**) are processed can vary between systems. Searches within parentheses are performed first and operations proceed from left to right. For example, *diet therapy AND (bulimia OR anorexia)* will retrieve records containing the two concepts, *Bulimia + Diet Therapy*, or the two concepts, *Anorexia + Diet Therapy*, or records that contain all three concepts, *Bulimia + Diet Therapy + Anorexia*.



If you don't put in the parentheses, the search statement is processed strictly from left to right, so that the **AND** is done first. This search strategy will retrieve records containing both of the concepts, *Diet Therapy + Bulimia*, or any records with the concept *Anorexia*.



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URL: <https://libguides.umn.edu/BooleanOperators>

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