

The Concept Web: Bridging Patients & Research

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The Information Explosion

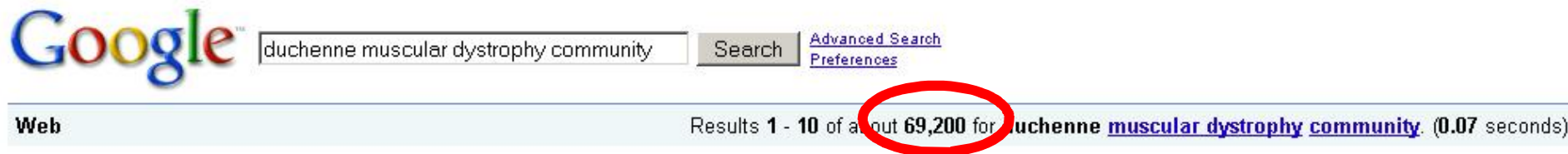
The size of the internet has exploded but
what % of this expansion represents real quality?

For example:



A screenshot of a Google search interface. The search bar contains the text "duchenne muscular dystrophy". To the right of the search bar is a "Search" button and two links: "Advanced Search" and "Preferences". Below the search bar, the text "Results 1 - 10 of about 369,000 for duchenne muscular dystrophy. (0.05 seconds)" is displayed. The number "369,000" is circled in red.

Or (add the query term “community”):



A screenshot of a Google search interface. The search bar contains the text "duchenne muscular dystrophy community". To the right of the search bar is a "Search" button and two links: "Advanced Search" and "Preferences". Below the search bar, the text "Results 1 - 10 of about 69,200 for duchenne muscular dystrophy community. (0.07 seconds)" is displayed. The number "69,200" is circled in red.

How many of these results contain redundancies, inaccuracies & ambiguities?

The Researcher faces the same problem

PubMed contained over 17,000,000 abstracts by the end of 2007

Our Duchenne example again:

The screenshot shows the PubMed search interface. At the top left is the NCBI logo. The main header features the PubMed logo and the text "A service of the U.S. National Library of Medicine and the National Institutes of Health" with the URL "www.pubmed.gov". Below the header is a navigation bar with tabs for "All Databases", "PubMed", "Nucleotide", "Protein", "Genome", "Structure", "OMIM", "PMC", and "Journals". The search bar contains the text "duchenne muscular dystrophy" and has a "Go" button and a "Clear" button. To the right of the search bar are links for "Advanced Search" and "Save Search". Below the search bar are buttons for "Limits", "Preview/Index", "History", "Clipboard", and "Details". The "Display" section shows "Summary" selected, "Show 20" items, and "Sort By" and "Send to" dropdown menus. A summary box displays "All: 6283" and "Review: 686" with a star icon. At the bottom left, the text "Items 1 - 20 of 6283" is circled in red. At the bottom right, there is a "Page 1 of 315 Next" indicator and an "Also try:" link.

The point?

The downside of the internet explosion

means

The text web yields a blur of information that current tools cannot handle

therefore

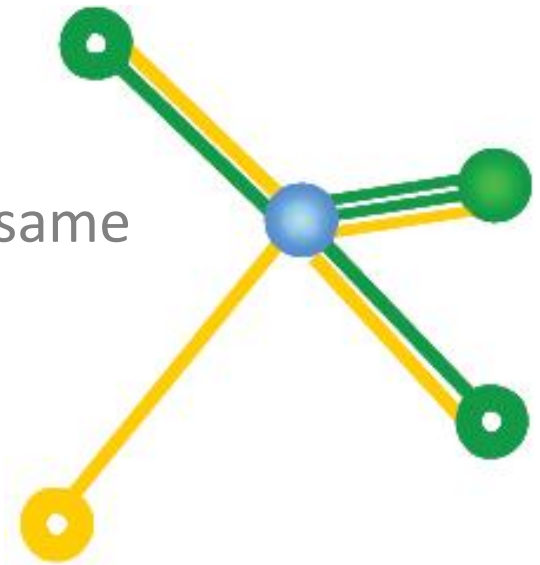
It represents a barrier to innovation & discovery

A solution: The Concept Web

Computing which analyses billions of sentences at the concept level to facilitate new kinds of discovery

The 'knowlet' is born

1. Take a concept e.g. Epidermolysis Bullosa
2. Give it an ID and give its translations the same ID
3. Analyze the neighbouring concepts
4. Determine the nature of the relationship



Knowledge Discovery

Relational knowledge discovery

1. Ontological (**factual**) association e.g. Epidermolysis Bullosa & Skin Abnormalities ●
2. Observational association (**co-occurrence**) ○ e.g. Epidermolysis Bullosa & collagen type VII location

Associative knowledge discovery: Predict potential areas of knowledge discovery ○

Epidermolysis Bullosa and **laminin alpha 3** are both associated with the following concepts. Their association score is 0.18.

Non-Fibrillar Collagens

Laminin subunit alpha-5 precursor (Mus musculus)

Integrin beta-4 precursor (Rattus norvegicus)

Integrin beta4

laminin-6

Laminin subunit beta-3 precursor (Mus musculus)

Collagen Type XVII

keratinocyte migration

Knowledge Discovery: wikiprofessional.org

Source publications

View publications about:

Epidermolysis Bullosa

The **Epidermolysis Bullosa** knowlet was created by extracting all associated concepts from these representative publications:

Steele RW.
Epidermolysis bullosa and congenital cytomegalovirus.
Clin Pediatr (Phila). 2007; 46(9):851

Kawachi M, Tamai K, Saga K, Yamazaki T, Fujita H, Shimbo T, Kikuchi Y, Nimura K, Nishifuji K, Amagai M, Uitto J, Kaneda Y.
Development of tissue-targeting hemagglutinating virus of Japan envelope vector for successful delivery of therapeutic gene to mouse skin.
Hum Gene Ther. 2007; 18(10):881-94

Shields HM, Shaffer K, O'farrell RP, Travers R, Hayward JN, Becker LS, Lauwers GY.
Gastrointestinal manifestations of dermatologic disorders.
Clin Gastroenterol Hepatol. 2007; 5(9):1010-7; quiz 1005-6

1 - 2 - 3 - 4 - 5 Next >

Knowlet for Epidermolysis Bullosa

The **Epidermolysis Bullosa** Knowlet condenses the information pertaining to Epidermolysis Bullosa and shows only the connected concepts (direct connections shown in green, indirect connections shown in yellow).

Source concepts

bullosa

add to knowlet

new search

Insert term from the Life Sciences, e.g., Pulmonary embolism

● **Epidermolysis Bullosa**

Connected concepts

hide | show histogram

Filter by type

Proteins Diseases Physiology Other
 Chemicals Anatomy Living Beings

apply filters

● factual ● co-occurrence ● predictive

add to source concepts

- **Epidermolysis Bullosa Simplex Kobner** Explain
- **Skin Diseases, Genetic** Explain
- **Cockayne-Touraine Disease** Explain
- **Skin Abnormalities** Explain
- **Skin Diseases, Vesiculobullous** Explain
- **Metabolic disease of collagen** Explain
- **Congenital connective tissue disorder** x

WikiProfessional

View WikiProfessional article about:


Epidermolysis Bullosa

Join the million minds and add your ideas on the subject of **Epidermolysis Bullosa**

Epidermolysis Bullosa

Definition: inherited chronic noninflammatory skin disease manifested by vesicles, large bullae (blisters), and skin erosions which often result from trauma.

 edit

- + Definition
- + Also known as
- + Localization and spatial information
- + Conceptual and other information
- + Terminological information
- + Reference information
- + Tags
-  View full entry

Hang on!

I thought this workshop was about Online Communities