

# LES DÉFIS DU NUMÉRIQUE EN SANTÉ : APPRENTISSAGES ET LEÇONS

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# DÉCLARATIONS

## Financement

- PI : FRQS, IRSC, PCORI, FCI, MERSTQ
- Co-I : AHRQ, NIH

## Aucun conflit d'intérêt

## Images

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# GÉNIE DES FACTEURS HUMAINS

Adapter les systèmes (technologies)  
aux usagers, au lieu d'attendre que  
les usagers s'adaptent aux systèmes  
(technologies)



# LA SANTÉ NUMÉRIQUE

Les soins primaires

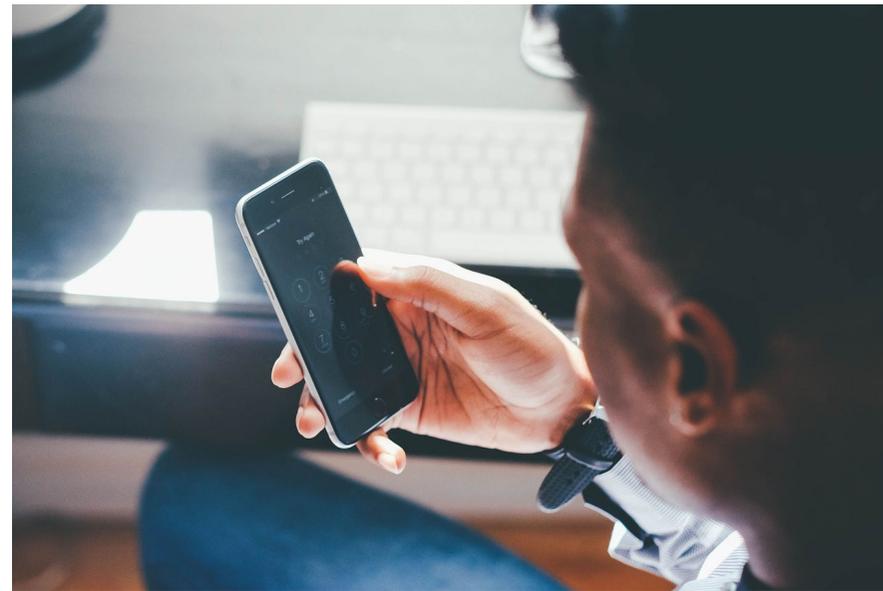
L'éducation en santé

La communication

Le soutien à la prise de décision

P. ex. capsules d'apprentissage,  
portails patients

- Bien présenter les concepts difficiles
- Aider les personnes ayant moins de numératie



# LA NUMÉRATIE EN SANTÉ

*Les personnes ont de la difficulté avec les proportions, par exemple :*

Un cancer qui « tue 1 286 sur 10 000 personnes » (13%) est pire qu'un cancer qui « tue 24,14 sur 100 » (24%) (Yamagishi 1997)

Même avec des personnes très scolarisées (88% avec une éducation universitaire), p. ex. 30% n'ont pas pu compléter le blanc :  $20 \text{ sur } 100 = \text{ \_\_\_\_\_\%}$  (Lipkus 2001)

# LA NUMÉRATIE EN SANTÉ

Même les médecins ... (Perneger & Agoritsas, 2011)

Le nouveau médicament est « clairement meilleur ».	Médecins (n=1431)	Patients (n=1121)
Nouveau : 96% survivent Ancien : 94% survivent	8%	15%
Nouveau : 4% meurent Ancien : 6% meurent	27%	21%
Nouveau médicament réduit la mortalité d'un tiers	67%	48%

# LA CONGRUENCE DÉCISION-VALEURS

Beaucoup moins étudiée ...

REVIEW

## Design Features of Explicit Values Clarification Methods: A Systematic Review

Holly O. Witteman, PhD, Laura D. Scherer, PhD, Teresa Gavaruzzi, PhD,  
Arwen H. Pieterse, PhD, Andrea Fuhrel-Forbis, MA, Selma Chipenda Dansokho, PhD,

REVIEW

## Effects of Design Features of Explicit Values Clarification Methods: A Systematic Review

Holly O. Witteman, PhD, Teresa Gavaruzzi, PhD, Laura D. Scherer, PhD,  
Arwen H. Pieterse, PhD, Andrea Fuhrel-Forbis, MA, Selma Chipenda Dansokho, PhD,  
Nicole Exe, MPH, Valerie C. Kahn, MPH, Deb Feldman-Stewart, PhD,  
RCPC,

What helps people make values-congruent decisions? Eleven strategies tested across six studies

AUTHORS Holly O. Witteman, Anne-Sophie Julien, Martin Tremblay-Breault, Ruth Ndjaboue, Nicole Exe, Valerie Kahn, Laura Scherer, Angela Fagerlin, Brian J. Zikmund-Fisher

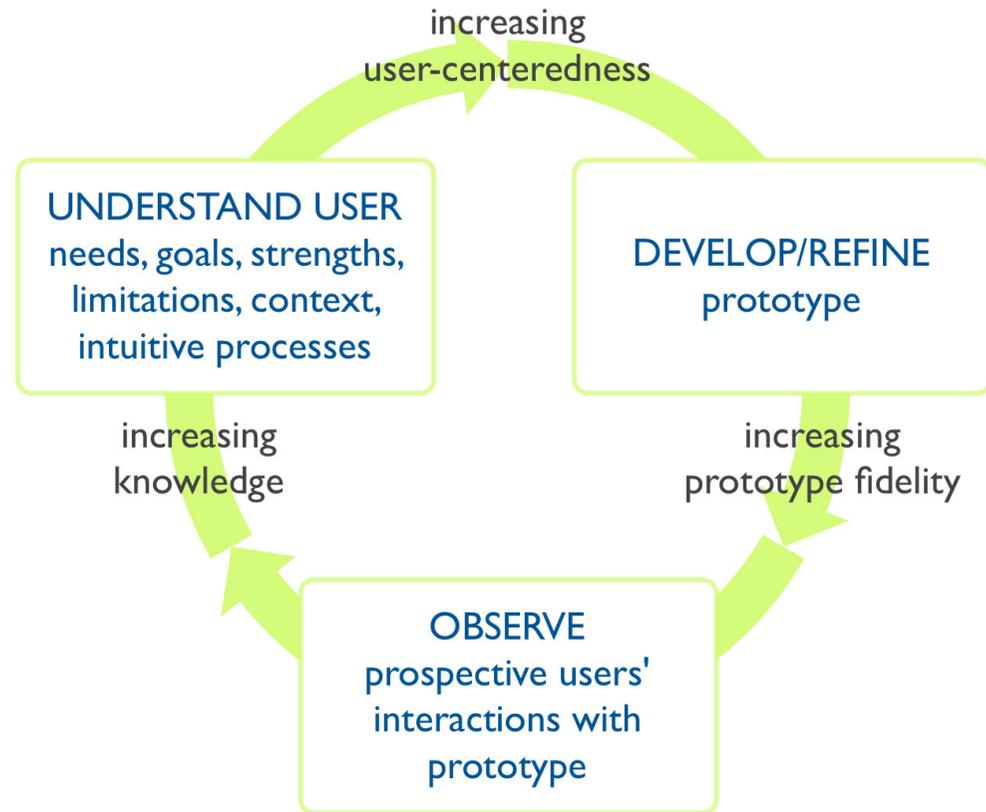
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by displaying the  
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use of the heteroge-  
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ted with caution.  
methods have been  
is needed to deter-  
of values clarifica-  
nactices in values  
should assess val-  
ures of longer-term  
ion: decision mak-  
ng: values clarifica-  
thod: preferences;  
0-776)

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fication methods  
nment with va-

# MÉTHODOLOGIE

Design axé sur l'utilisateur

## User-Centered Design Framework



Witteman et al., *Systematic Reviews*, 2015  
DOI: 10.1186/2046-4053-4-11

Framework synthesized from: **Abras** C, Maloney-Krichmar D, Preece J: User-centered design. In Encyclopedia of human-computer interaction. Edited by: Bainbridge W. Thousand Oaks: Sage Publications; 2004; **Gould** JD, Lewis C: Designing for usability: key principles and what designers think. Commun ACM. 1985, 28:300-11; **ISO** 9241-210:2010: ergonomics of human-system interaction—part 210: human-centred design for interactive systems (formerly known as 13407). Switzerland: International Standards Organization; 2010; **Mao** J-Y, Vredenburg K, Smith PW, Carey T: The state of user-centered design practice. Commun ACM. 2005, 48:105-9; **Nielsen** J: The usability engineering life cycle. Computer. 1992, 25:12-22; **Norman** DA: The design of everyday things. New York: Basic Books; 2002.

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# MÉTHODOLOGIE

Conception centrée sur l'humain (human-centered design)

- ISO, IDEO

Design thinking

- Racines: *business*, d.school @Stanford

Co-conception, -production, -création

- Terme de plus en plus préféré dans certains pays

Conception participative (participatory design)

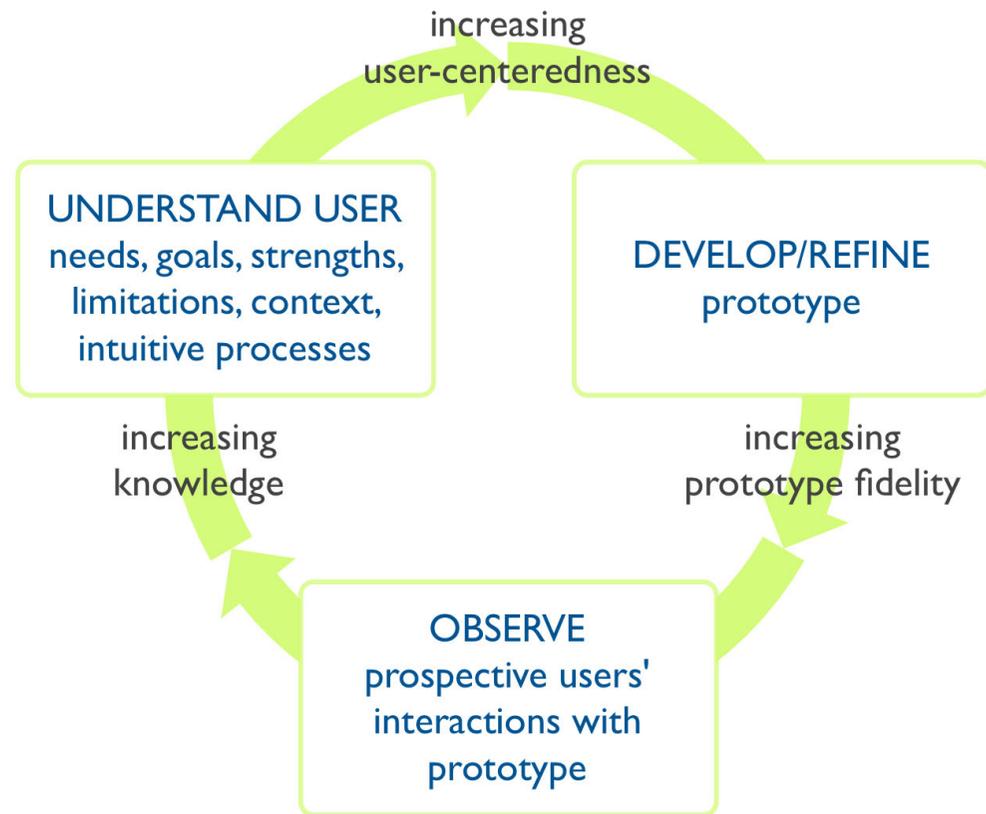
- Racines: recherche-action participative (participatory action research)

Différences

- Tradition disciplinaire
- Emplacement du pouvoir, responsabilité

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## User-Centered Design Framework



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# MÉTHODOLOGIE

Design axé sur l'utilisateur

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Dugas et al. *BMC Medical Informatics and Decision Making* (2017) 17:12  
DOI 10.1186/s12911-016-0399-8

## RESEARCH ARTICLE

Open Access



## Involving members of vulnerable populations in the development of patient decision aids: a mixed methods sequential explanatory study

Michèle Dugas<sup>1,2</sup>, Marie-Ève Trottier<sup>1,2</sup>, Selma Chipenda Dansokho<sup>1</sup>, Gratiannie Vaissou<sup>1,2</sup>, Thierry Provencher<sup>1</sup>, Heather Colquhoun<sup>3</sup>, Maman Joyce Dogba<sup>4</sup>, Sophie Dupéré<sup>5</sup>, Angela Fagerlin<sup>6</sup>, Anik M. C. Giguere<sup>1,4,7</sup>, Lynne Haslett<sup>8</sup>, Aubri S. Hoffman<sup>9</sup>, Noah M. Ivers<sup>10,11</sup>, France Légaré<sup>2,4</sup>, Jean Légaré<sup>12</sup>, Carrie A. Levin<sup>13</sup>, Matthew Meneer<sup>14,15</sup>, Jean-Sébastien Renaud<sup>1,4</sup>, Dawn Stacey<sup>16</sup>, Robert J. Volk<sup>17</sup> and Holly O. Witteman<sup>1,2,4\*</sup>

### Abstract

**Background:** Patient decision aids aim to present evidence relevant to a health decision in understandable ways to support patients through the process of making evidence-informed, values-congruent health decisions. It is recommended that, when developing these tools, teams involve people who may ultimately use them. However, there is little empirical evidence about how best to undertake this involvement, particularly for specific populations of users such as vulnerable populations.

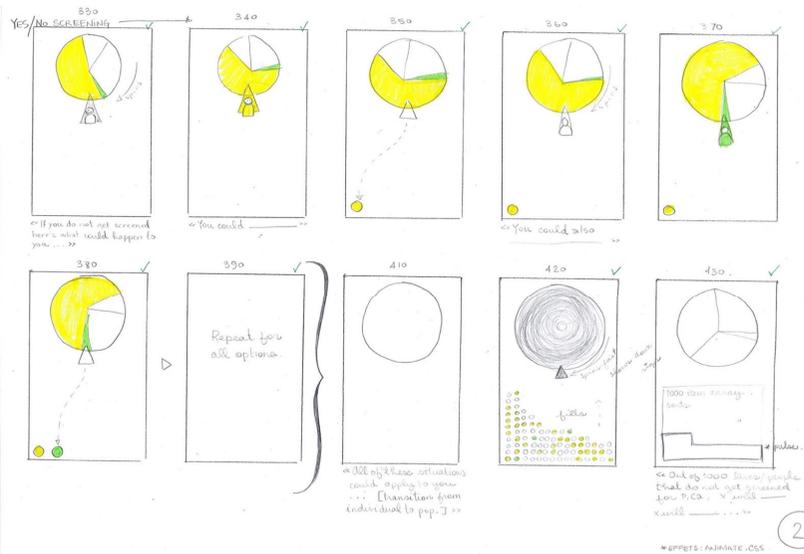
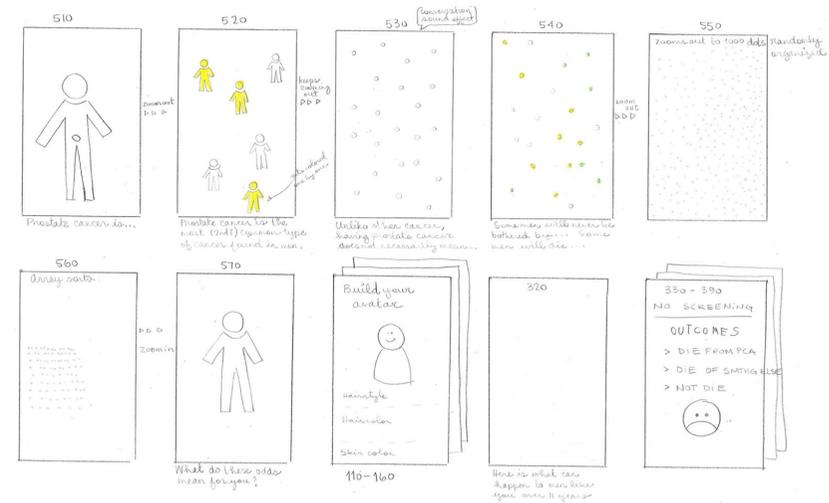
**Methods:** To describe and compare the development practices of research teams that did and did not specifically involve members of vulnerable populations in the development of patient decision aids, we conducted a secondary analysis of data from a systematic review about the development processes of patient decision aids. Then, to further explain our quantitative results, we conducted semi-structured telephone interviews with 10 teams: 6 that had specifically involved members of vulnerable populations and 4 that had not. Two independent analysts thematically coded transcribed interviews.

**Results:** Out of a total of 187 decision aid development projects, 30 (16%) specifically involved members of vulnerable populations. The specific involvement of members of vulnerable populations in the development process was associated with conducting informal needs assessment activities (73% vs. 40%, OR 2.96, 95% CI 1.18–7.99,  $P = .02$ ) and recruiting participants through community-based organizations (40% vs. 11%, OR 3.48, 95% CI 1.23–9.83,  $P = .02$ ). In interviews, all developers highlighted the importance, value and challenges of involving potential users. Interviews with developers whose projects had involved members of vulnerable populations suggested that informal needs assessment activities served to center the decision aid around users' needs, to better avoid stigma, and to ensure that the topic truly matters to the community. Partnering with community-based organizations may facilitate relationships of trust and may also provide a non-threatening and accessible location for research activities.

(Continued on next page)

# MÉTHODOLOGIE

## Le prototypage





### Personnalise ton avatar



Cheveux



Couleur de cheveux



Couleur de la peau



Poursuivre

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# MÉTHODOLOGIE

En labo : suivi du regard, conductivité de la peau, EEG, etc.

Ailleurs : penser à voix haute

RCTs en ligne

Vers les essais pragmatiques

Approche modulaire

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# Prostate Cancer - Concept Map

Double-click on the nodes you wish to select or unselect, then click on the "Export selection" button to export them as a CSV file

← Click on a theme in the legend to display all its nodes information

- Themes
- Should I get tested?
  - Risk-Probability
  - Medical Info
  - Screening
  - What Comes After
  - Values
  - Tradeoffs
  - Time Marches On
  - Decision process
  - Risk Factors



Node size

Resize factor

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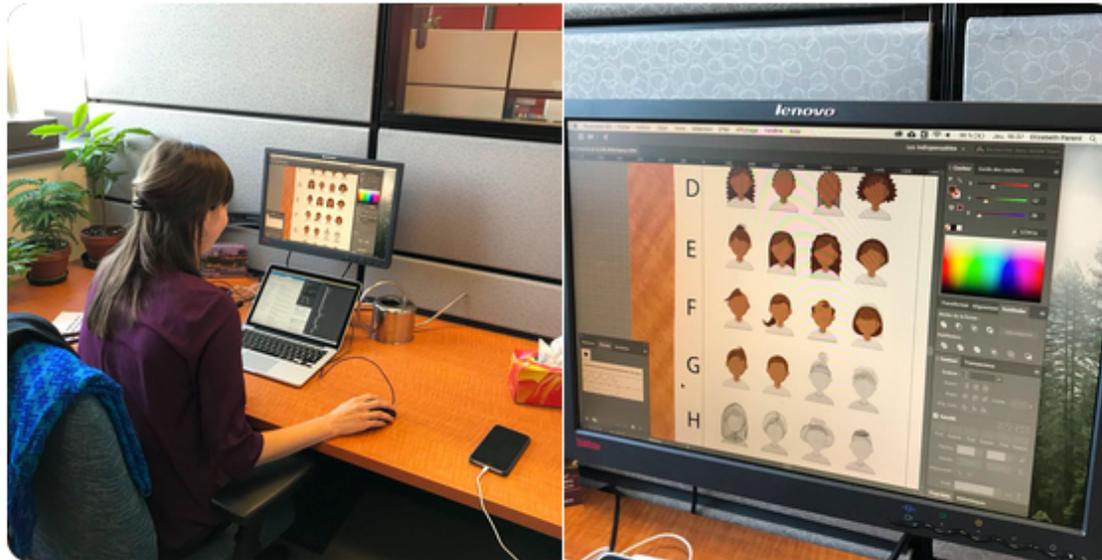
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@wittemanlab

Following



Work in progress! @parent\_liz making hairstyles for the avatar-building part of an upcoming study. (We plan to make this freely available for other researchers once we're happy with it.) -HW



10:50 AM - 28 Sep 2018

2 Retweets 15 Likes



@wittemanlab



Personnalise ton avatar

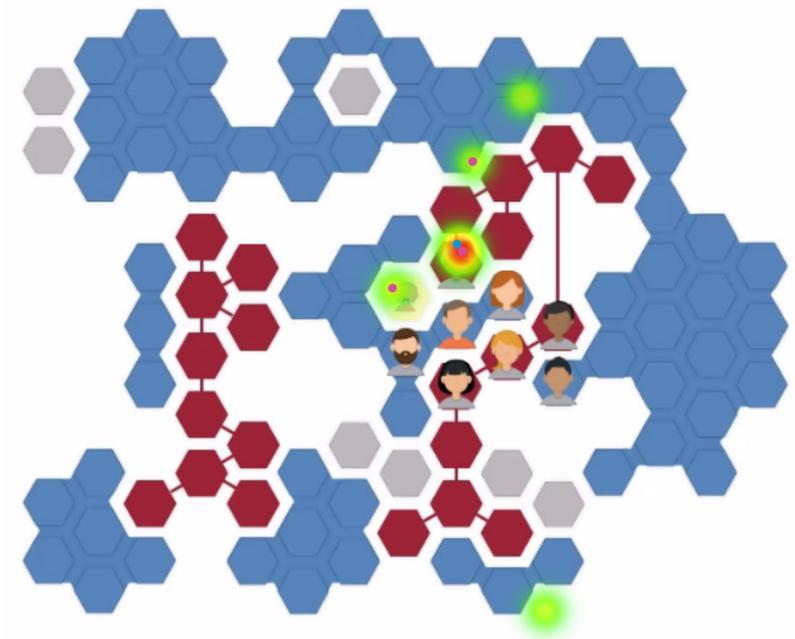
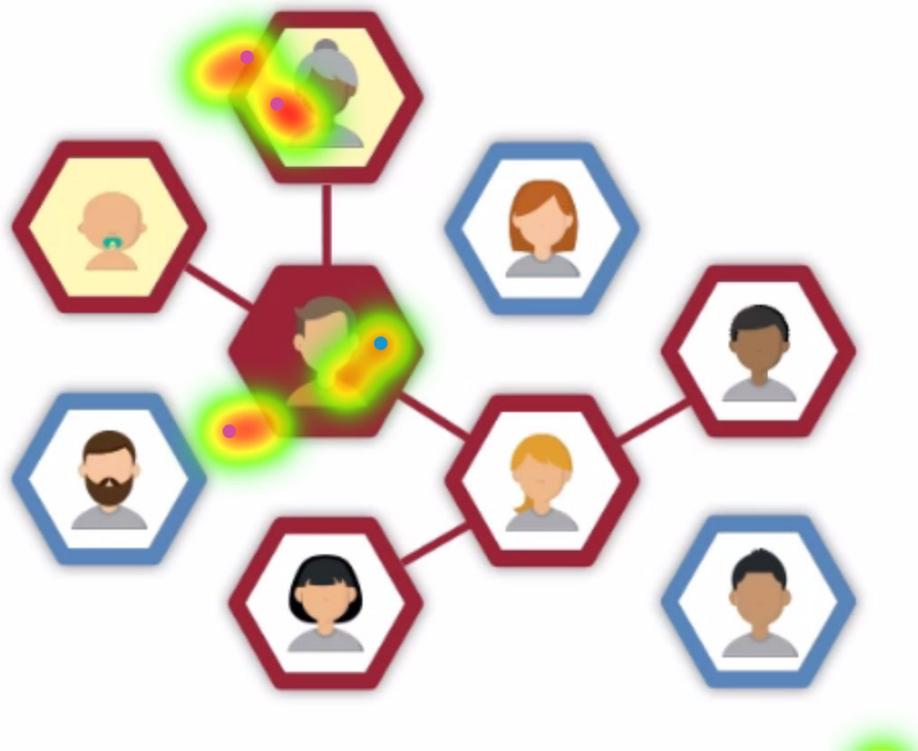
Cheveux

Couleur de cheveux

Couleur de la peau

Poursuivre

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## Ce qui compte pour vous

Avant de choisir entre les deux options, veuillez prendre un instant pour considérer ce qui compte le plus pour vous. Utilisez le curseur ci-dessous pendant que vous considérez vos sentiments. Sachez qu'il n'y a pas de mauvaise réponse.

Les textes **encadrés en pointillés** peuvent être modifiés en les double-cliquant.

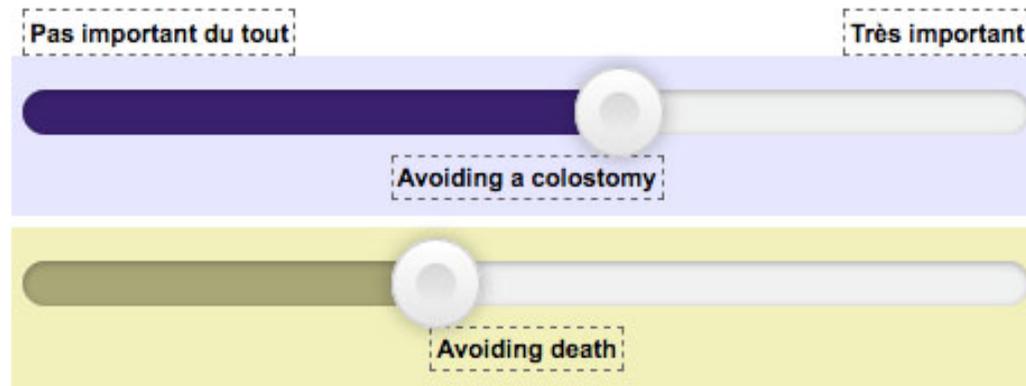
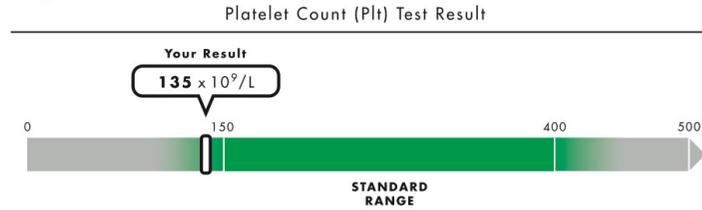


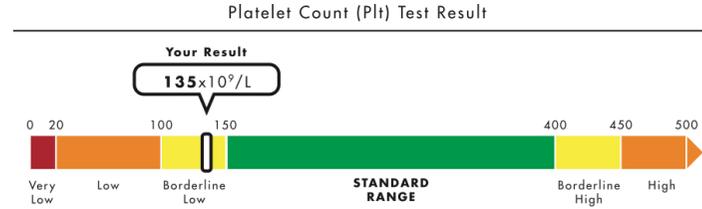
Table:

Test	Your Result	Standard Range	Units
Platelet Count (PLT)	135	150-400	$\times 10^9/L$

Simple Line:



Block Line:



Gradient Line:

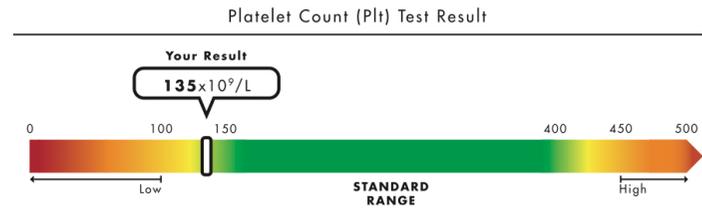
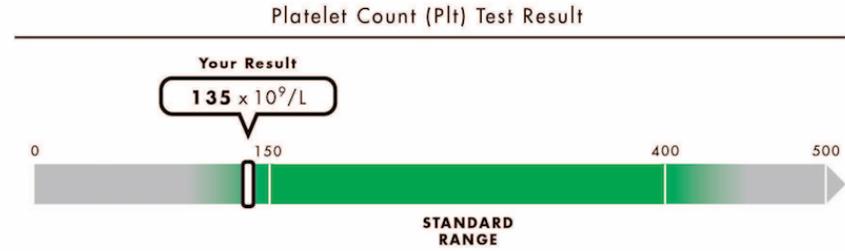
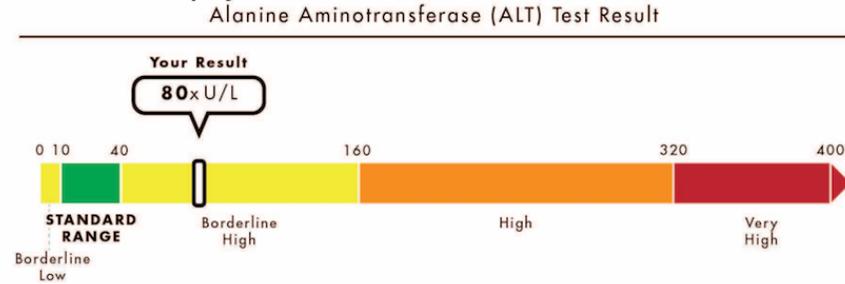


Figure 1. Visual display formats used in this study

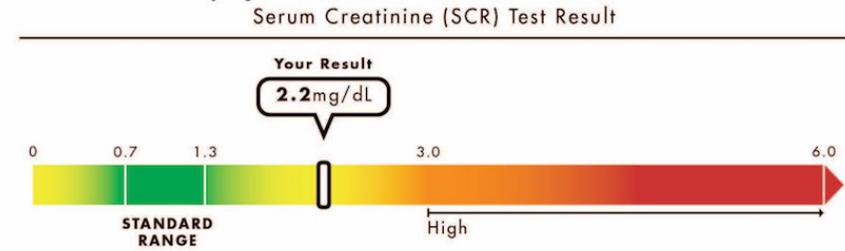
Simple Line Display:



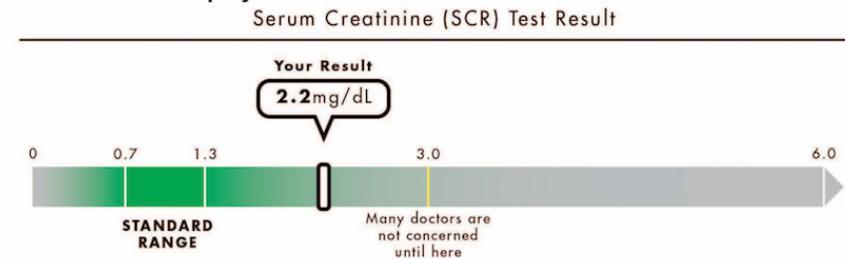
Blocks Line Display:



Gradient Line Display:



Harm Anchor Display:

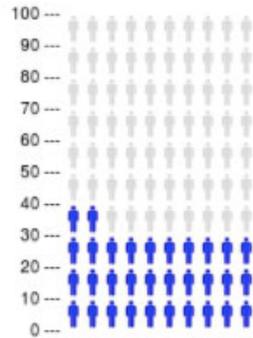


# Welcome to Clinician.IconArray.com

## 1 Risk/Benefit

Use one risk/benefit to show the effect one treatment option.

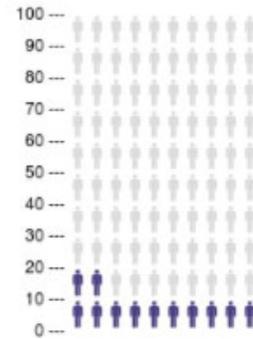
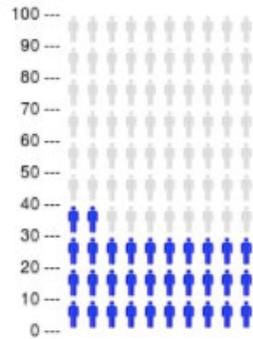
[Get Started >>](#)



## 2 Risks/Benefits

Use two risks/benefits to compare 2 treatment options side-by-side.

[Get Started >>](#)



# DÉFIS & LEÇONS TIRÉS

JOURNÉE SCIENTIFIQUE  
DU CERSSPL-UL  
25.OCT.2018 // Québec

le numérique  
au service de  
l'innovation

Agir ensemble pour  
optimiser les soins et  
services de proximité



Centre de recherche  
sur les soins et les services de  
première ligne de l'Université Laval

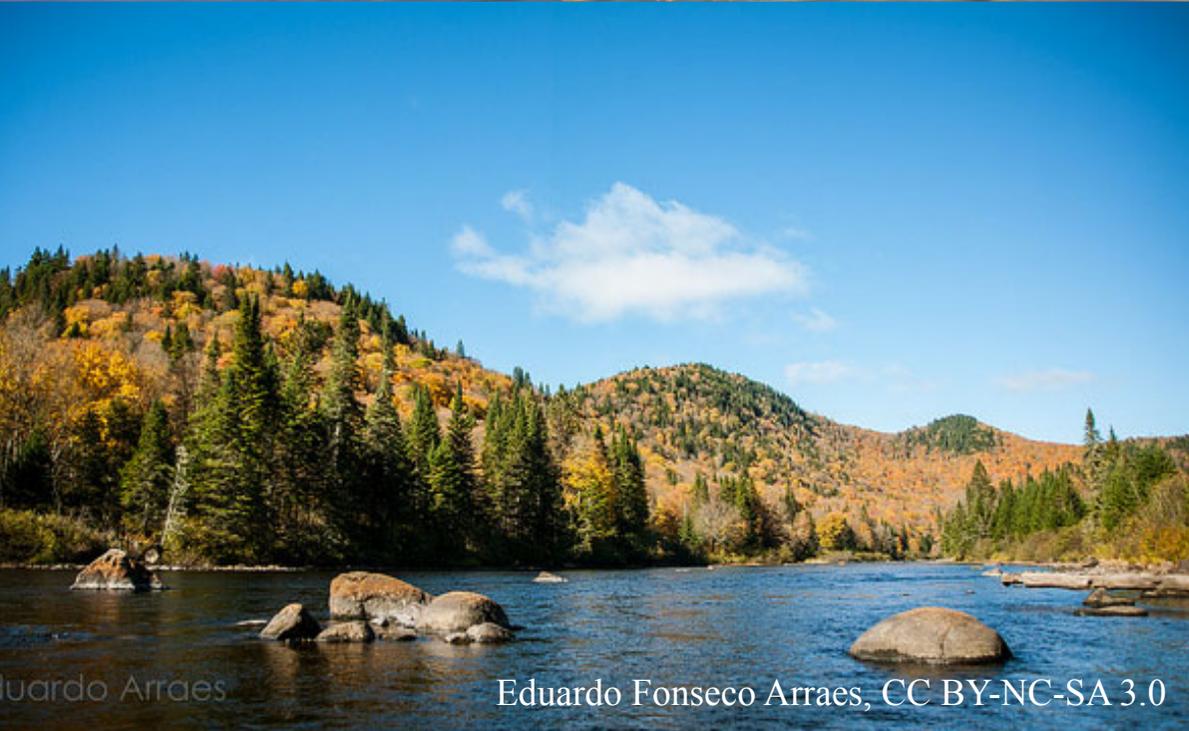
UNIVERSITÉ  
LAVAL

Centre intégré  
universitaire de santé  
et de services sociaux  
de la Capitale-Nationale  
Québec

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Eduardo Fonseca Arraes

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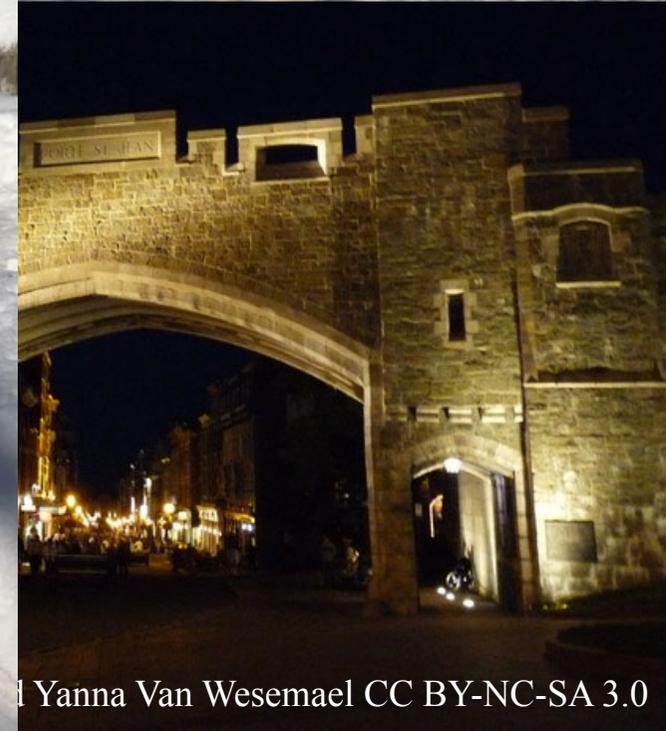


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**Dr. Holly Witteman**

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I remember when **@eastendchc** cut wait times 10 years ago largely by making it a centre priority, tracking it, acting on problems, and giving reception staff more authority. My family and I got care there for years and never waited more than 5 minutes.

**André Picard**  @picardonhealth

Quebec company @Bonjour\_Sante says it can cut clinic wait times to less than 20 minutes using AI, by @srastello [bloomberg.com/news/articles/...](https://www.bloomberg.com/news/articles/...) via @technology #cdnhealth

10:13 PM - 24 Jul 2018

6 Likes



6



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**Dr. Holly Witteman** @hwitteman · 31 May 2016

1/There are winter days when the bus is late, overheated & I get motion sick traveling an hour to a meeting at a hospital across town.



**Dr. Holly Witteman** @hwitteman · 31 May 2016

2/But there are also warm spring days when I get to bicycle from one meeting at a family medicine unit to another at the university ...



**Dr. Holly Witteman** @hwitteman · 31 May 2016

3/and then along lilac-lined streets for yet another meeting at the cancer centre at the heart of a beautiful 400+ year old city.



**Dr. Holly Witteman**

@hwitteman

4/And then I don't mind so much the way my collaborations are spread all across this charming city.



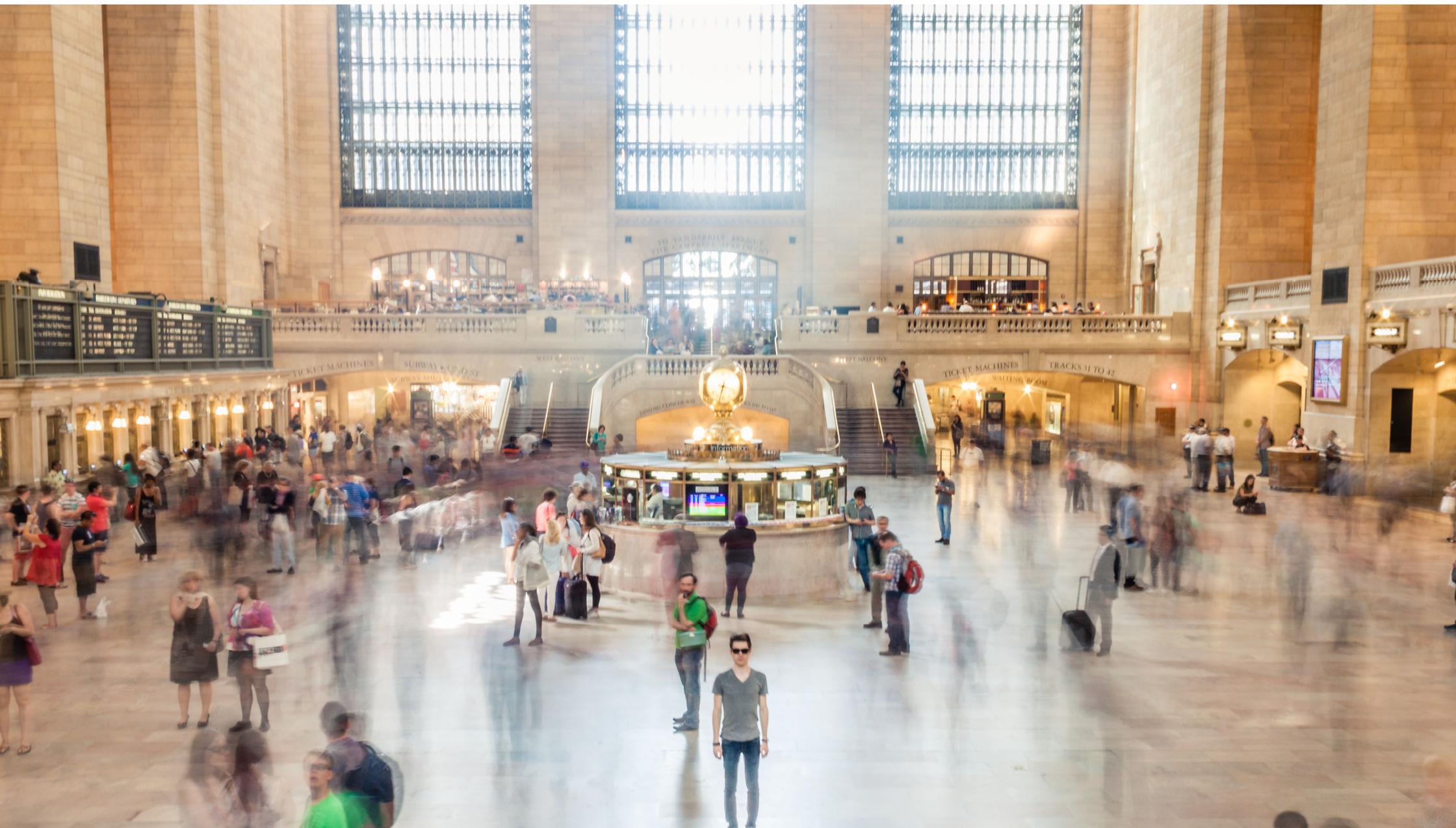
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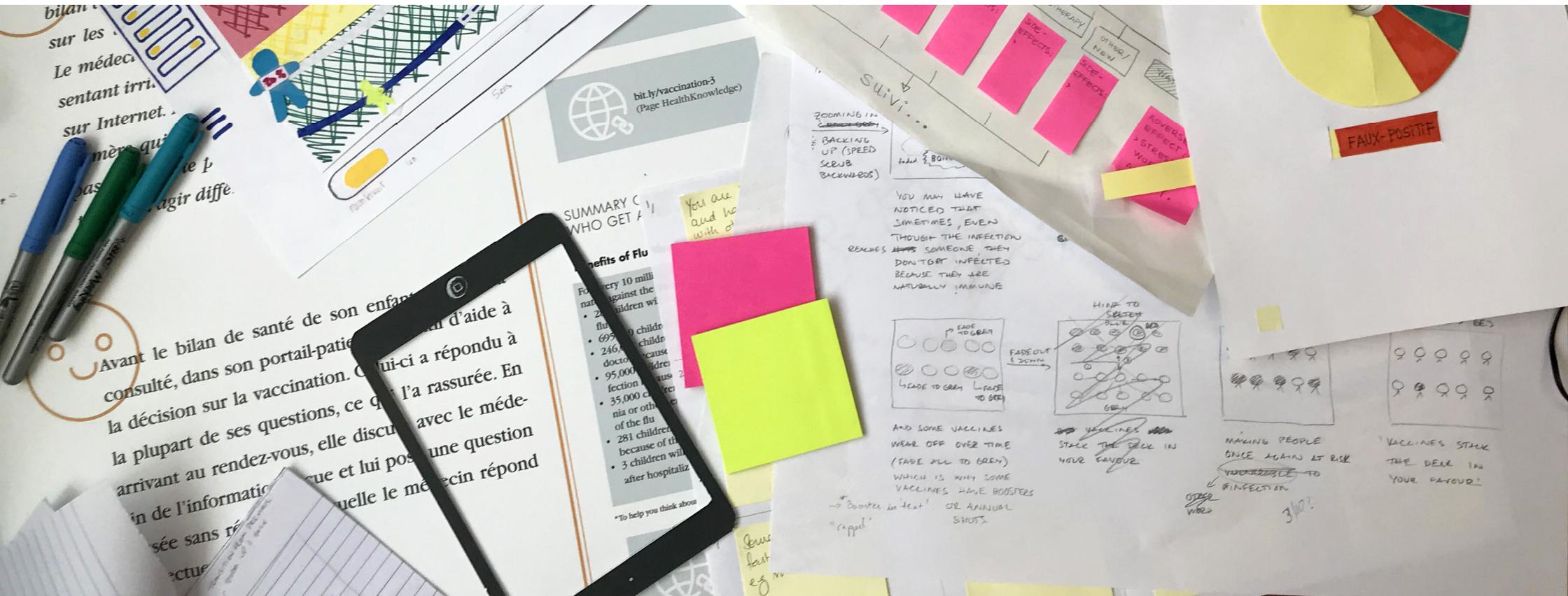
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Crédit d'image: Jared Cherup (Flickr)





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