

### Genetic Resources for Families

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Mountain States Regional Genetics Network



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## Who is MSRGN?

Mountain States Regional Genetics Network



# Mountain States Regional Genetics Network

8 State Region

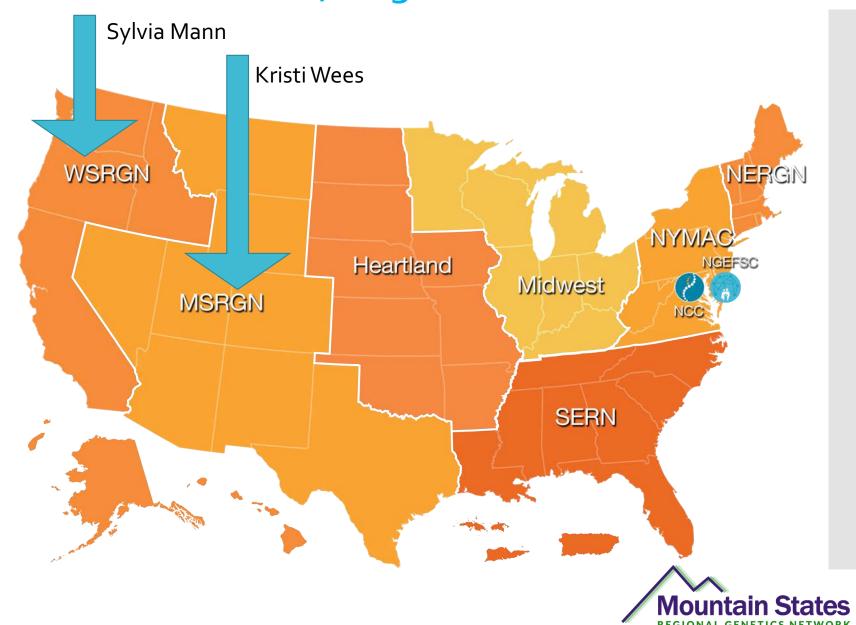
MSRGN's mission is to ensure that individuals with genetic disorders and their families have access to quality care and appropriate genetic expertise and information through facilitating a professional network of:

- genetics clinics,
- key primary care practices,
- consumer advocates,
- and state health department resources.

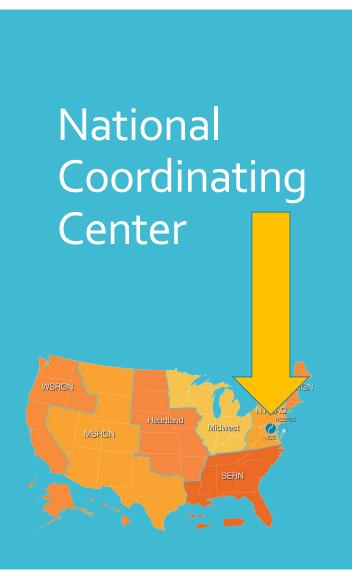


#### MSRGN and WSRGN are 2 of the 7 Regional Genetics Networks

Regional Genetics Networks



#### NCC and Public Health Genetics Week





Public health genetics applies genetic and genomic information to improve public health and prevent disease.

- "What is Public Health Genetics?" May 26
- "Who is Involved in Public Health Genetics" May 27
- "Public Health Screening" May 28
- "Public Health Genetics Resources" May 29
- TWITTER CHAT- May 29<sup>th</sup> 2pm ET



#### MSRGN'S Structure and Members

- State Teams- 8 of them
- Genetic Ambassadors
- Advisory Committee
- Management Team

Genetic
Professionals
(Geneticist and
GC)

Consumers,
Families, Patients
Individuals with a
Genetic
Condition, Family
Leaders

MSRGN's

"Customers"

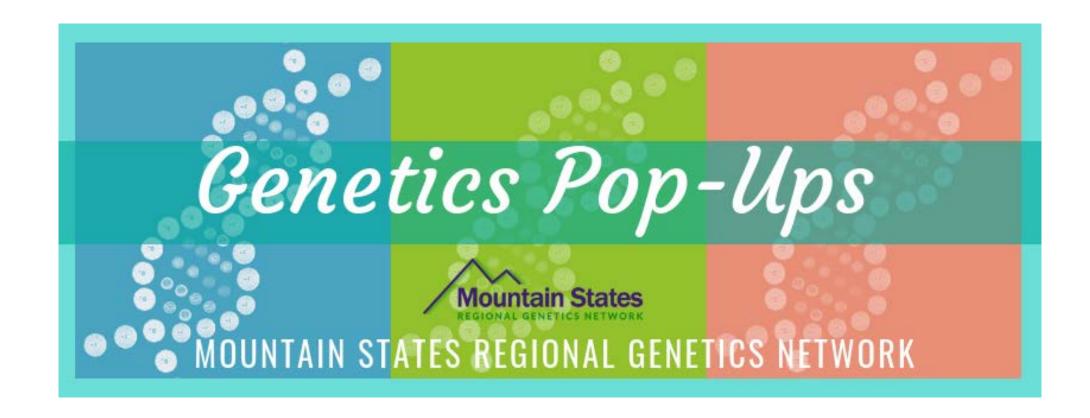
or Members

Professionals

**Public Health** 

Primary
Care
Physicians





#### What is a Genetics Pop-Up?

Resources, educational materials and information about genetic services for individuals, families and their communities



#### A Gene in a Box

When we have an in-person Genetics Pop-Up this box of resources is mailed to the Genetic Ambassador who is hosting the Pop-Up!

For today we will be sharing resources ELECTRONICALLY!







#### www.MountainStatesGenetics.org



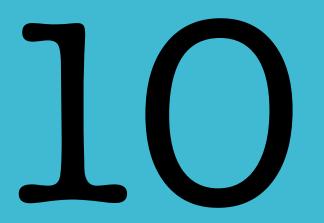


# Top 10 Genetic Resources

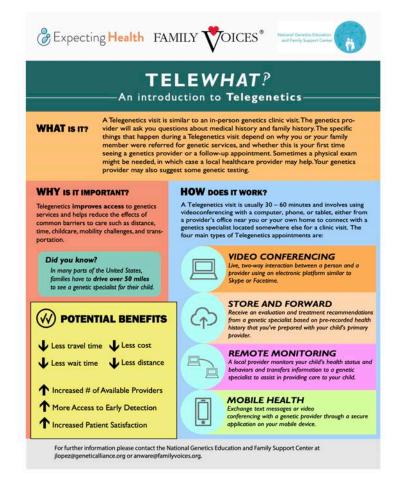
To access electronic versions of the resources we will be sharing: scan this code or use your camera on your smart phone and focus it on this code to open the website.







#### TeleWhat?

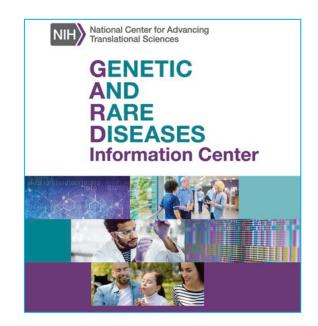


Infographic from National Genetic Education Support Center
Partnership with Genetic Alliance, Family Voices, & Expecting Health
Webinar:

https://www.youtube.com/watch?v=eYHfPq\_Q3X4&feature=youtu.be







GARD Information Center and Hotline: Genetic and Rare Disease



## **\$1-888-205-2311**

#### **GARD Hotline**

Available in English and Spanish

Available Monday - Friday, 12 noon-6 p.m. Eastern Time

Speak with a Genetic Counselor about a Genetic Condition

No Medical Advice can be given



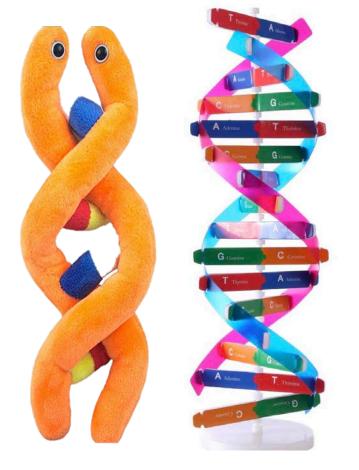


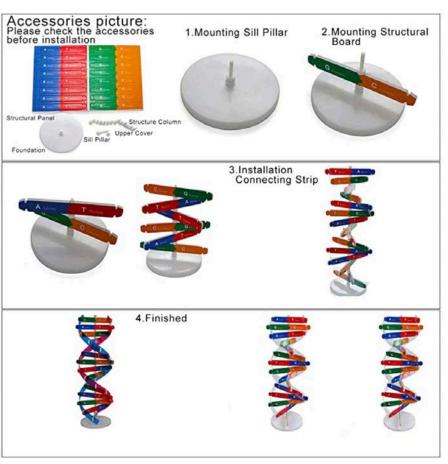


National Geographic: Your Genes- 100 things you never knew!





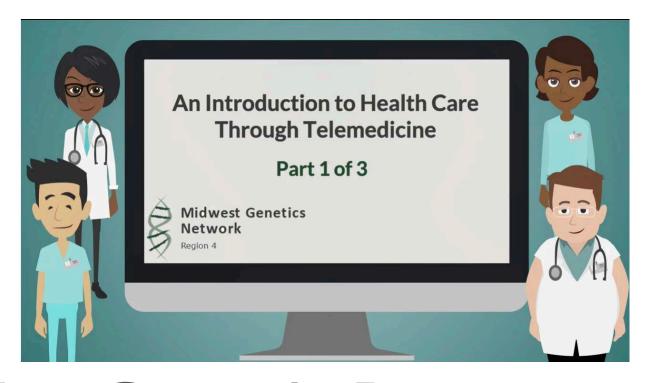




DNA Double Helix model Kit & Giant Microbes Stuffed DNA

Available for \$10-15 each, online



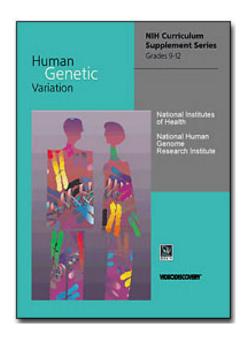


From our Colleague's at Midwest Genetics Network
Introduction to Healthcare Through Telemedicine parts 1-3
Also includes a Family Video about their Telegenetics experience









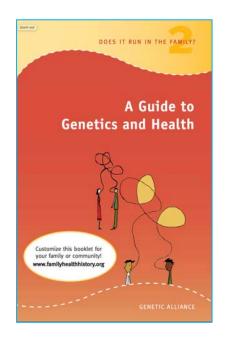
NIH Genetics Curriculums:

Rare Diseases and Scientific Inquiry Grades 6-8

Human Genetic Variation Grades 9-12





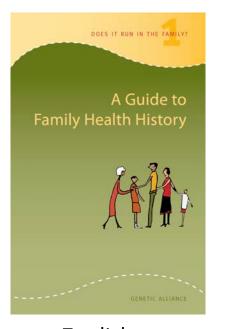


Genetic Alliance Books:

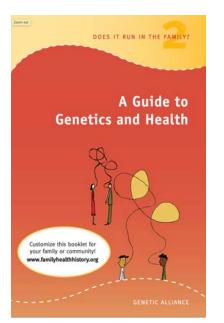
A Guide to Family Health History

A Guide to Genetics and Health











English Sp.

English

Spanish

#4: Genetic Alliance Booklets

A Guide to Genetics and Health

A Guide to Family Health History

Available in both English and Spanish







Documentary:

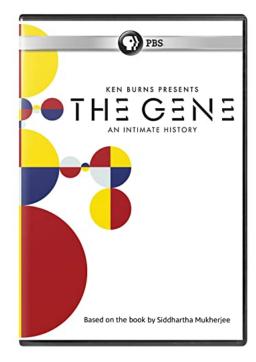
KEN BURNS PRESENTS THE GENE: AN INTIMATE HISTORY part 1 & 2 free to view on PBS



## #3 Genetic Resource: The Gene Documentary

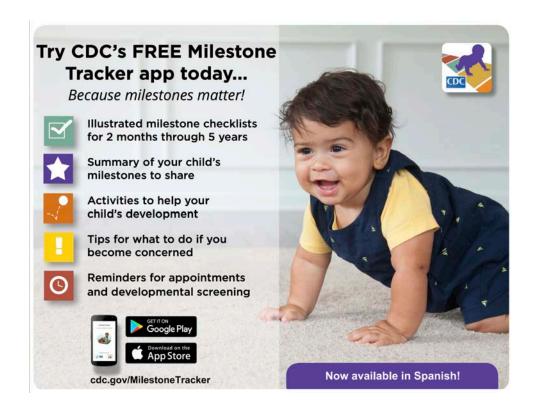


- Aired in April 2020
- On PBS
- 2-part series
- Produced by award winning film maker: Ken Burns
- Available for FREE to watch at this website:
- www.pbs.org/kenburns/the-gene/watch





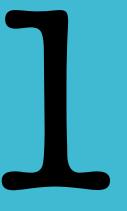




CDC's Learn the Signs Act Early

Milestone Tracker App







MSRGN's Developmental Delay Algorithm Toolkit



#### #1 Developmental Delay Algorithm Toolkit

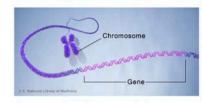
- One of the highest referral categories to Genetics in our region is for Developmental Delay diagnosis
- This algorithm was created to help Pediatricians work with families on beginning the genetics workup for a child with a developmental delay
- Online Toolkit includes info for primary care doctors and families



#### Synopsis of Approach to Genetic Diagnosis in Developmental Delay

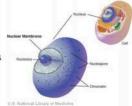
- Primary care providers may consider initiating genetic diagnostic testing for patients with developmental delay when access to genetic services is limited.
- The American Academy of Pediatrics has published their statement on appropriate genetic evaluation of children with developmental delay: see Moeschler et al Pediatrics 2014
- Ensure that acute neurological concerns are addressed with appropriate evaluation and not deferred until after genetic testing.
- Referrals for developmental therapies should be made concurrently with a genetic evaluation.
- · Our recommendations are as follows:
  - Tier 1
    - Chromosomal microarray
    - Fragile X trinucleotide repeat analysis
  - Tier 2
    - Large gene sequencing panel of developmental delay-associated genes
  - Tier 3
    - Whole exome or whole genome sequencing may be considered.
    - See <u>www.treatable-id.org</u> for a testing algorithm and information on diagnoses that have specific treatment and can be diagnosed with biochemical testing.
      - Serum amino acids
      - Serum homocysteine
      - Urine creatine metabolites
      - Urine organic acids
      - Urine purines and pyrimidines
      - Urine oligosaccharides
      - Urine mucopolysaccharides

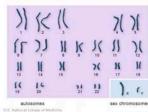
#### Genes: What They Are and What They Do



Each cell in the human body contains about 25,000 to 35,000 genes. They are found on tiny spaghetti-like structures called chromosomes, which are found inside cells. Your body is made of billions of cells, which are the very small units that make up all living things.

Most cells have one nucleus. The nucleus is a small egg-shaped structure inside the cell, and it has many parts. The nucleus acts like the brain of the cell. It tells every part of the cell what to do. It contains our chromosomes and genes. As tiny as it is, the nucleus has more information in it than the biggest dictionary you've ever seen.

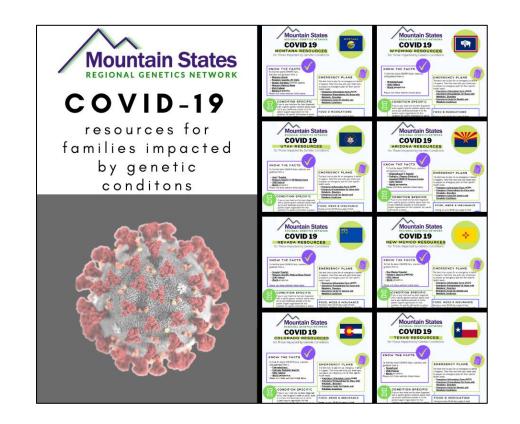




Chromosomes come in matching pairs and there are hundreds — sometimes thousands — of genes in just one chromosome. In humans, a cell nucleus contains 46 individual chromosomes or 23 pairs of chromosomes. Half of these chromosomes come from one parent and half come from the other parent.

Under the microscope, we can see that chromosomes come in different lengths and striping patterns. When they are lined up by size and similar striping pattern, the first twenty-two of the pairs are called autosomes: the final pair of chromosomes is called sex chromosomes, X and Y. The sex chromosomes determine whether you're a boy or a girl: females have two X chromosomes while males have one X and one Y



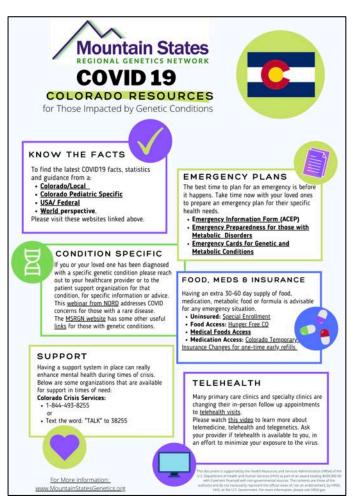


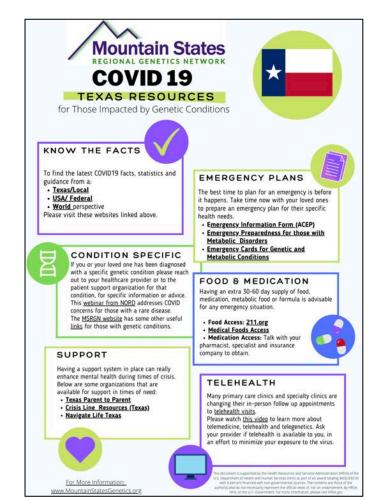


MSRGN's COVID-19 Resource Sheets for families impacted by genetic conditions in our 8 states.





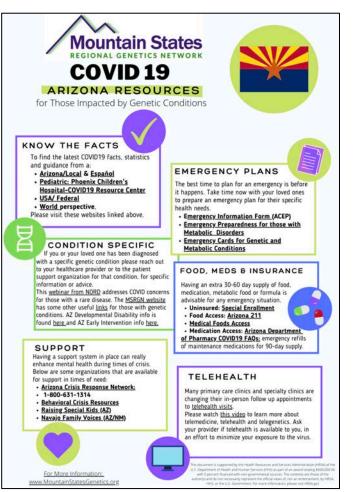


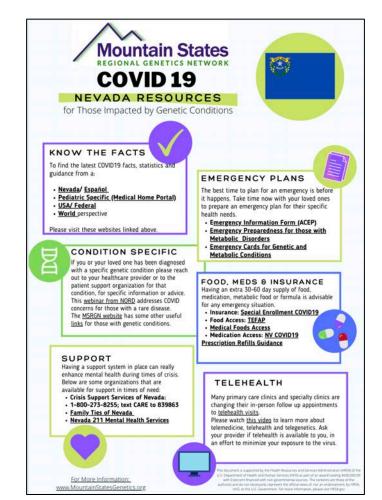


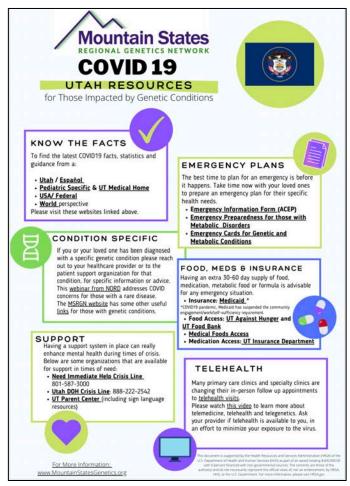


Colorado Texas New Mexico

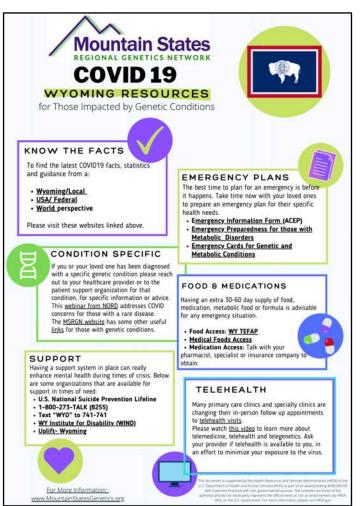




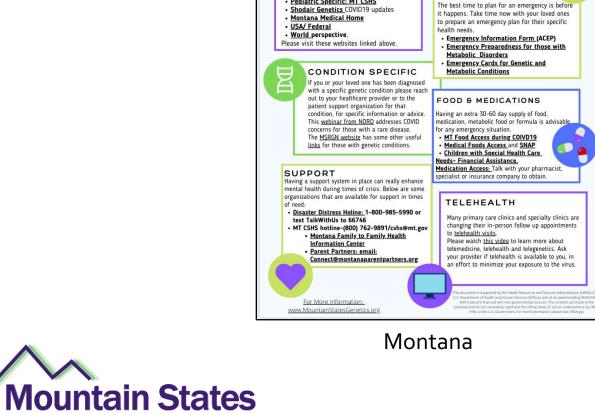




Arizona Nevada Utah



Wyoming



REGIONAL GENETICS NETWORK

**Mountain States** 

COVID 19

MONTANA RESOURCES

for Those Impacted by Genetic Conditions

KNOW THE FACTS To find the latest COVID19 facts,

statistics and guidance from a:

· Pediatric Specific: MT CSHS

· Montana /Local

MONTANA

**EMERGENCY PLANS** 





#### Top 10 Genetic Resources

To access electronic versions of the resources have shared today: please scan this code or use your camera on your smart phone and focus it on this code to open the website.



If you have any questions or would like to get involved in our activities, please contact us:

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www.MountainStatesGenetics.org