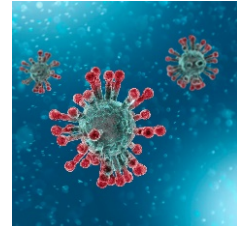


Dear KD Families and Friends,

First and foremost, all of our team at the KDRC join me in hoping that this newsletter reaches you and your loved ones in good health and that your family has weathered the COVID-19 stressful year.

We also hope **THAT YOU AND YOUR LOVED ONES HAVE BEEN VACCINATED!**

- **All children who had KD should be vaccinated when they reach an age group that is eligible to receive the vaccine.**
- **This recommendation includes children with important heart damage from KD.**



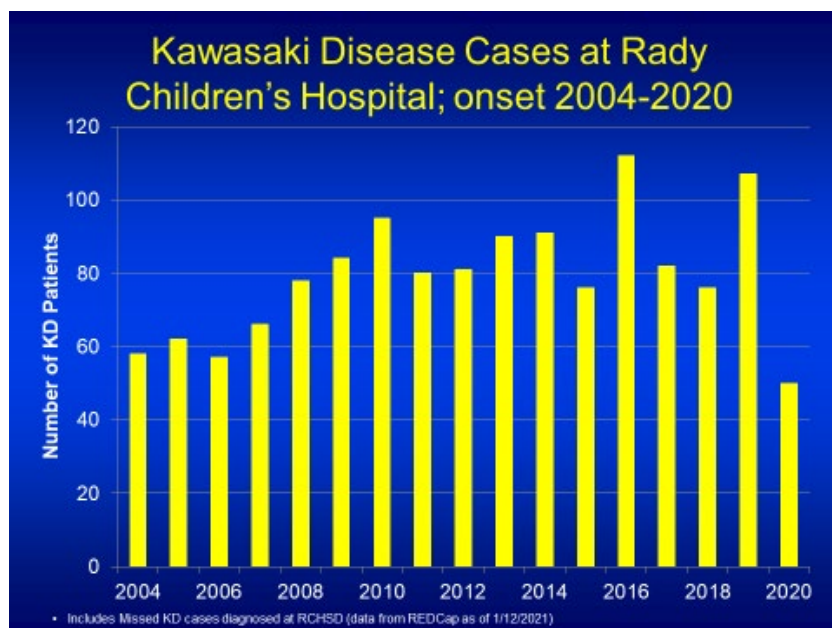
As you may know, our KD team pivoted to take on added responsibilities for the care of children who developed the Multisystem Inflammatory Syndrome in Children (MIS-C). Like KD, these children develop a rash/fever illness 4-6 weeks after exposure to the coronavirus, SARS-CoV-2. Children affected by MIS-C also develop acute problems with the heart and often require treatment in the intensive care unit for several days. We have cared for over 70 of these patients here at Rady Children's Hospital. Fortunately, with the effort to stop the spread of the virus through vaccination, numbers of affected children have decreased.

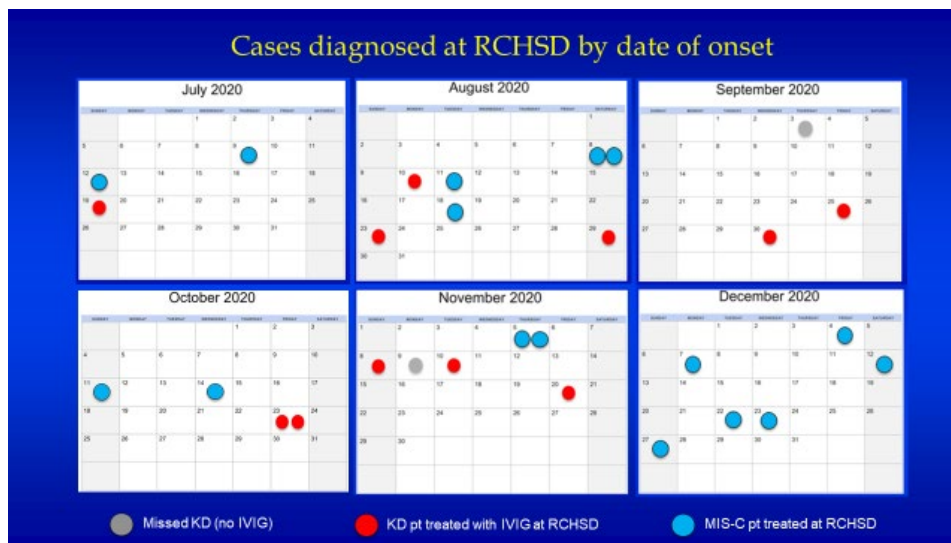
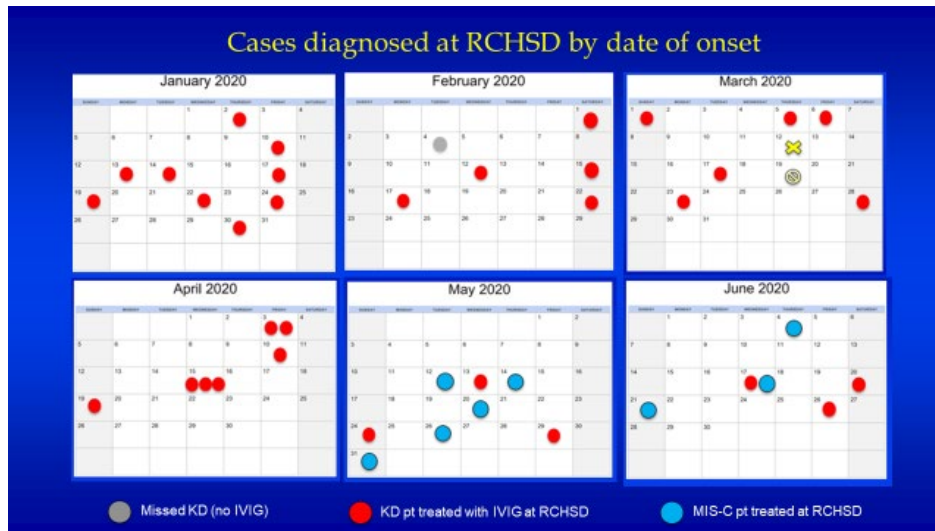
- **There is no indication that children who have had KD are at any risk of developing MIS-C after exposure to the coronavirus.**

While our community observed the masking and social distancing mandates, something interesting occurred:

**THE NUMBER OF KD PATIENTS DROPPED BY 50%!!!!!!!**

This experiment of nature has proven without a shadow of a doubt that the triggers for KD are inhaled! See below for the story of what happened over the last year to our KD and MIS-C patients.





## DATE OF ONSET OF KD and MISC CASES TREATED AT RCHSD IN 2020

The task at hand is to try to understand what it is that KD patients inhale that triggers their disease. In collaboration with Prof. Michael Levin and his talented team at Imperial College in London, throat swabs from our patients whose parents signed consent for participation in our research are being analyzed along with swabs from children with fever from other causes to hunt for the trigger that sets KD in motion in our genetically susceptible children. Stay tuned as our research progresses!

### **11<sup>th</sup> Annual KD Symposium was held virtually:**

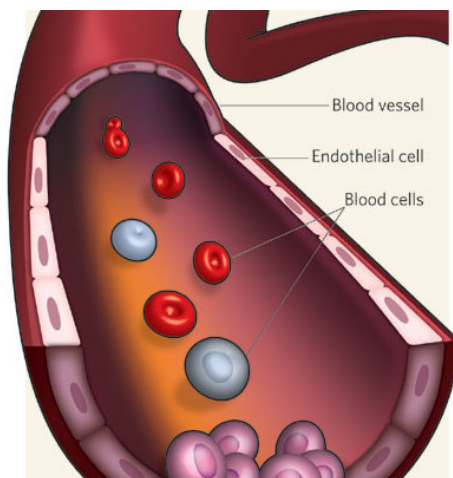
The symposium was held in October 2020 with nearly 300 participants joining the live Zoom Webinar. The recording of the live-stream video has had over 430 views since then. A huge thanks to our Symposium panelists and Dr. Gabriela Ivankovich Escoto for providing the simultaneous Spanish translation and the KD Foundation in Boston for supporting the event! We hope that in the fall of 2021 we can hold an in-person event again in addition to the live-streaming!

2020 KD Symposium video: <https://www.youtube.com/watch?v=OLKVircSFVE&feature=youtu.be>

## NEW RESEARCH OPPORTUNITIES!

### The PEACH study: Promoting Endothelial Cell Health after KD

Endothelial cells form the barrier between blood vessels and tissues and control the flow of substances and fluid into and out the vessel. Damage to the function of these cells can cause serious health issues. A recent study by the Kawasaki Disease Research Team at Rady Children's Hospital and UC San Diego found that endothelial cells are damaged in children who develop coronary artery aneurysms as a result of KD.



Statins are a class of drugs known to lower cholesterol, reduce vascular inflammation, and improve endothelial cell health. The KD Research Team has shown that atorvastatin is safe and well-tolerated in children. Atorvastatin may improve endothelial cell health in children who have coronary artery damage as a result of KD. This clinical study will involve the use of a system to measure endothelial cell well-being that is rapid, inexpensive, and currently available as a research test at Rady Children's Hospital, the EndoPAT 2000.™ To perform this test, the child's index fingers are inserted into a small sleeve that can measure changes in blood flow. A blood pressure cuff will be inflated on one arm for 5 minutes and then released to measure changes in blood flow. Healthy endothelial cells release substances that cause a big change in blood flow.

Additionally, the KD Research Team may request a blood sample for biomarkers (proteins in blood) that indicate health or disease in blood vessels. If you/your child is starting atorvastatin, you will be invited to return for a repeat EndoPAT test after ~3 months when you would return to KD Clinic for routine blood testing required for all patients taking atorvastatin.

Together, EndoPAT testing and measuring biomarkers in the blood may lead to new insights into how we can help restore endothelial cell health in children with damaged arteries from KD. The KD team will be reaching out to patients who are eligible to participate.

## COMPLETED AND ON-GOING STUDIES

### *Climate science and KD*

THE JOURNAL OF PEDIATRICS • [www.jpeds.com](http://www.jpeds.com)

ORIGINAL  
ARTICLES

### Temporal Clusters of Kawasaki Disease Cases Share Distinct Phenotypes That Suggest Response to Diverse Triggers

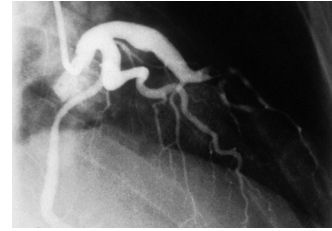
Jane C. Burns, MS<sup>1,2</sup>, Laurel L. DeHaan, MS<sup>3</sup>, Chisato Shimizu, MD<sup>1</sup>, Emelia V. Bainto, BA<sup>1</sup>, Adriana H. Tremoulet, MD, MAS<sup>1,2</sup>, Daniel R. Cayan, PhD<sup>3</sup>, and Jennifer A. Burney, PhD<sup>4</sup>



This research project led by climate scientists Profs. Dan Cayan and Jennifer Burney established that not only does KD cluster in time, but children within those clusters share specific clinical and laboratory features that are similar across members of the cluster but different between clusters. This strongly suggests that different groups of children are being triggered by different agents in the environment and that there is not simply ONE cause of KD, but many.

**Management of Myocardial Infarction in Children with Giant Coronary Artery Aneurysms after Kawasaki Disease**

Jane C. Burns, MD<sup>1</sup>, Howaida El-Said, MD<sup>1</sup>, Adriana H. Tremoulet, MD, MAS<sup>1</sup>, Kevin Friedman, MD<sup>2,3</sup>, John B. Gordon, MD<sup>4</sup>, and Jane W. Newburger, MD, MPH<sup>2,3</sup>



This collaborative project provided the first published guidance for management of children suffering an acute heart attack because of blood clots in the giant aneurysms. The message is that while no one wants to think about the possibility of this event in our children with giant aneurysms, every medical center who cares for these patients must be prepared and have a plan in place just in case.....

**Epidemiology of KD in Latin America**

**Red Enfermedad de Kawasaki en América Latina (REKAMLATINA)(Latin American KD Network)**

led by Drs Adriana Tremoulet and Rolando Ulloa Gutierrez

This network of physicians across Latin America is investigating the epidemiology, treatment, and outcomes of children with KD.



Stay tuned for more answers!!



We are so grateful to the wonderful families whose donations have made all the research progress possible. Our challenge going forward is to continue to support the important research at the KDRC. All of our team members at the KDRC rely entirely on grant support and donations to fund the important work that is improving outcomes for KD patients here in San Diego and worldwide.

Your gifts have helped the KDRC team in their pursuit of answers. Your ongoing support will help us on our journey to solve the mystery of KD. Donations may be made at :

<https://www.radyfoundation.org/donate/donate-to-kawasaki-disease-research>

We hope you have found this newsletter informative. If there are topics you would like to see covered or questions that you have, please contact us at [kdresearch@ucsd.edu](mailto:kdresearch@ucsd.edu) and we will include answers to your questions in our next newsletter.

With best regards,

The KDRC Team