

Jaga Harkamtibmas, Polres Lampung Utara Bentuk Pokdar Kamtibmas

Lampung Utara : Detikperu.com-

Dalam rangka menjaga harkamtibmas di Kabupaten Lampung Utara Polres Lampung Utara menggelar silaturahmi dan pembentukan Pokdar Kamtibmas di aula Rekonfu Polres setempat, Rabu (11/12/19).

Kegiatan tersebut dihadiri oleh Kapolres Lampung Utara AKBP Budiman Sulaksono, S.I.K., Kakimal Lampung Letkol Sri Depranoto, Ketua DPRD Romli, Pasi Intel Kodim, Kesbangpol Kab. Lampung Utara, Ketua MUI, Ketua NU, Ketua FKUB dan tokoh masyarakat setempat.

Kapolres Lampung Utara AKBP Budiman Sulaksono, S.I.K. mengatakan, keamanan adalah kebutuhan bersama sehingga terwujud kenyamanan dalam menjalani aktivitas sehari-hari. Sesuai UU Nomor 2 Tahun 2002 menjaga harkamtibmas adalah tugas pokok polri tetapi kami menyadari kami tidak bisa menjalankan semua itu tanpa partisipasi semua elemen masyarakat.

“Kita harus bersama-sama untuk menciptakan kamtibmas yang kondusif di Lampung Utara, kami sadar tugas ini tidak bisa oleh jajaran Polres sendiri,” kata Kapolres.

Untuk itu kami harapkan kegiatan ini tidak hanya seremonial saja tapi bisa terlaksana sesuai dengan harapan kita semua. Mari kita bersama-sama bekerja untuk menciptakan keamanan di kabupaten lampung utara.

“kita niatkan bersama dan sebagai ladang ibadah untuk mewujudkan Kabupaten Lampung Utara yang aman dan kondusif,” ujar AKBP Budiman.

Sementara itu ditempat yang sama Ketua DPRD Lampung Utara mengatakan, dengan dibentuknya Pokdar ini bisa dijadikan jembatan silaturahmi bersama untuk menciptakan kamtibmas di Lampung Utara.

“Dengan adanya organisasi seperti ini kita harap semua yang terlibat dapat berperan aktif untuk menciptakan situasi Kamtibmas yang kondusif di wilayah Kabupaten Lampung Utara. Karena tanpa kerjasama yang baik rasa aman dan nyaman tidak mungkin dapat terwujud,” papar ketua DPRD Lampung Utara Romli.

Sumber: lampungvisual.com-

Polres Lamteng Made rasma buka giat Rakor Ops Lilin Krakatau Tahun 2019

Lampung tengah: Detikperu.com-

Kapolres Lampung Tengah AKBP I Made Rasma.S.Ik.,M.Si membuka giat rakor dalam rangka Ops Lilin Krakatau tahun 2019 di Gedung Satpas Polres Lampung Tengah, Rabu (11/12/2019) Jam 10.00 WIB.

Giat Rakor dihadiri oleh Waka Polres Kompol Harto Agung, C, SH, S.Ik, MH, Pejabat Utama Polres Lampung Tengah, Perwakilan Kodim 0411 Lamteng diwakili Kapten Inf. Sunardi. Kadis Hub Kab. Lamteng diwakili Sekretaris Dishub Sdr. Helmi Z. Perwakilan Pol PP Pemkab. Lamteng, Sdr. Fauzi S.

Kapolsek Jajaran Polres Lamteng, Kanit Polsek jajaran, Perwakilan FKUB Kab. Lamteng, Perwakilan Ormas Islam, Organisasi, Kepemudaan, Kab. Lamteng. Perwakilan Lintas Agama

Kab. Lamteng, Perwakilan TOL Bakau Heni – Terbanggi Besar, Sdr. Saat dan Perwakilan Senkom Kabupaten Lamteng. Peserta rapat kurang lebih 50 dari berbagai instansi.

Kata Made Ops Lilin Krakatau Ta 2019 adalah Oprasi Kemanusiaan yang dilaksanakan Mulai tgl 21 Desember 2019 s/d 01 Januari 2020 dengan partisipasi para Tokoh masyarakat, Ormas baik Ormas Islam, Lintas Agama, maupun Ormas Kepemudaan dapat berkoordinasi dengan Polsek setempat.

Lebih lanjut pengamanan yang paling diutamakan dalam Ops Lilin Krakatau tahun 2019 adalah Pam Rest Area di Ruas Tol Bakauheni – Terbanggi Besar dan tidak hanya TNI Polri yang dikedepankan tetapi semua lapisan elemen masyarakat, serta Ormas siap membantu TNI dan Polri dalam pengamanan Natal dan tahun baru terutama gereja – gereja di wilayah kabupaten Lampung Tengah serta akan selalu berkoordinasi dalam rangka menciptakan situasi yang aman dan kondusif, ujar Made.

Karena Prediksi Wisata Lampung akan mengalami peningkatan dengan adanya Tol yang sudah sampai Kayu Agung Sumatra Selatan, Setelah acara rakor ini akan dilaksanakan pertemuan kembali antara pihak TNI Polri dengan Dinas instansi, maupun stake holder, terkait pembagian tugas dalam rangka pengaman natal dan tahun baru Ops Lilin Krakatau tahun 2019, tegas Made.

Sumber: lampung.visual.com

PKH Way kanan validasi 6.922
RTM Penerima Bantuan

pengentasan kemiskinan Tahun 2020, Pemkab hanya targetkan 1.186 Rumah Tangga Sasaran

Way kanan : Detikperu.com-

Melalui berbagai program Pengentasan kemiskinan yang telah dilaksanakan pemerintah Kabupaten Way Kanan, Angka kemiskinan di Kabupaten ini setiap tahun menurun secara signifikan.

Berdasarkan data dari BPS Way Kanan tahun 2015 angka kemiskinan mencapai 14,61 persen, tahun 2016 turun menjadi 14,58 persen, tahun 2017 turun lagi menjadi 14,06 persen dan tahun 2018 turun lagi menjadi 13,52 persen.

Hal tersebut dikatakan Bupati Way kanan Raden Adipati Surya pada Pembukaan Gerakan Pemberdayaan Program Keluarga Harapan (Gempar PKH) Kecamatan Bumi Agung. berlangsung Kampung Wonoharjo Kecamatan Bumi Agung, Rabu (11/12/2019).

“Program pengentasan kemiskinan yang sedang dilaksanakan saat ini adalah Program keluarga harapan (PKH) yang didukung oleh masyarakat dan institusi baik pemerintah maupun swasta.” Kata Raden Adipati Surya.

Program PKH yang diluncurkan sejak 2007 lalu menurut Raden Adipati Surya merupakan salah satu program unggulan yang mampu menurunkan angka kemiskinan di Way kanan, dengan sasaran keluarga sangat miskin.

“Keberhasilan PKH tentunya tidak berjalan sendiri tetapi bersinergi dengan program pengentasan kemiskinan lainnya berupa seperti KIP, KIS, subsidi listrik, subsidi gas, dan program lainnya yang bertujuan untuk memudahkan pengawasan, pemantauan dan mengurangi penyimpangan.” Kata Raden Adipati Surya.

kedepan pengentasan kemiskinan di Way kanan tentu akan sangat berat karena tantangan dan kendala sangat berat, dan kompleks, karenanya Bupati berharap agar kegiatan semacam Gempar PKH ini dapat menjadi agenda rutin untuk meningkatkan komitmen bersama.

Diterangkan Pula oleh Bupati Way kanan, total keluarga penerima manfaat sebanyak 24.311 KPM dan total bantuan yang telah disalurkan sampai dengan tahun 2019 lebih kurang 180 miliar

sementara itu Kepala Dinas Sosial Kabupaten Way Kanan Pardi mengatakan bahwa saat ini telah dilakukan validasi terhadap 6.922 calon Keluarga Penerima Manfaat (KPM), dengan demikian ada penambahan jumlah Keluarga Penerima Manfaat (KPM) Program Keluarga Harapan untuk tahun 2020.

Hal ini berbeda dengan Basis data terpadu Yang dikeluarkan oleh Pemkab Way kanan sehari sebelumnya saat rapat koordinasi pengentasan kemiskinan di Way kanan dimana hanya sekitar 1.186 rumah tangga sasaran baru yang menggantikan 1.094 rumah tangga sasaran yang telah naik ke status tidak miskin.

Sumber: lampungvisual.com

Manual To Choosing The Ideal Online Casinos Online Casino

The online casinos are the most modern gaming establishments that have been created for the fun loving individuals. We've obsessively examine stacks of training books on regulations, approaches, probabilities, cash supervision and all kinds of substance accessible in the large cannon of internet casino

textbooks with one aim in brain – improving our leads of succeeding. Moreover, for totally free spin bonus deals, the totally free spin you get from the casino can usually be used simply about selected slot machine or slot machines. There are numerous online casino games, based upon your preference and to the online casino you Join. Thankfully, cheers to online playing sector, you can nonetheless find reliable web pages that offer up you simply pleasure without just about any stress of being robbed.



Internet poker: More than the final 10 yrs, texas holdem offers grown to end up being 1 of the hottest gaming video games on this world, and online texas holdem is for the front of that surge. New individuals sole. by zero means databases any fake websites or People that have been blacklisted prior to nowadays so individuals may well come up with use of the casinos listed understanding that they are totally Protected and protected. Jackpot Heaven Gambling establishment has learned how to attention its participants by making use of video games from ProgressPlay, a new best programmer that has the status of casinounique.org providing ultra-realistic Code5 video games.

The chips can be used as the wagered amount for video games, admittance payment for blind levels and tourneys for the

gambling den game titles. Major rated casinos on line have found over this site with a variety of significant standards comply. To withdraw virtually any earnings produced when using a reward, competitors shall possess to guess 20 to 30 moments first of all. Get the top on-line baccarat casinos from Online casino US. Baccarat will be a gaming cards sport related to blackjack, where people try out and acquire their hands of two or three playing cards as near to the price of nine as doable.

If you're a new comer to taking part in texas hold'em on the web, it is obvious that you could get a great deal of Free Money Online Texas holdem should you have fun with your playing cards perfect. Its the most well-liked online gambling den sport which has ever been produced to study more latest industry with jackpots and Be training video game titles as okay. This type of scheme is offered to customers in the hopes that one day they would feel safe and confident enough to actually play for real money. On the other hand, when it arrives to the nearly all popular gambling house game titles, virtually all online individuals like slot equipment.

Extra meeting individuals do bear the brunt of the responsibility for the improvements that came about on the on line gambling den promotional industries. After you've achieved with playing no cost video tutorial casino wars online for amusing, you could effortlessly go to carry out most found in one of the online casinos offered in our web page. Have fun £10 about Bingo and acquire 1 rewrite in Paddy's Funds Fishing reel. You'll possess to work with the Cheng family members in the game to infiltrate the casino, breach its vault, grab its cash and exact revenge on the Duggan family members.

The Best Caribbean Beaches For 2019: The Ultimate List

One of my favorite destinations in the world is the Caribbean with its warm waters, sandy shores, and great cocktails. With so much destruction during Hurricane's Irma and Maria over a year ago, I am thrilled to report most of the best beaches and waterfront hotels are back in action with quite a few of them better than before. The perfect retreat for millions of tourists worldwide, the Caribbean not only offers up an amazing escape from cold winter climates but also creates memories to last for a lifetime.

Some of my finest memories include floating in the bathtub-warm waters of Aruba, sailing in the British Virgin Islands, deep sea fishing in Nicaragua and countless others. I have included several destinations like Bermuda, Turks & Caicos and the Bahamas that are not in the Caribbean but are an important part of the area, and also feature stunning beaches. I have become a bit of a beach aficionado having personally visited most of these beaches and am excited to present my favorites for 2019.

Anguilla

This two-mile sandy beach with soft, powdery white sand also offers up several great bars, restaurants and some amazing resorts. Busier than other beaches in the area but on Anguilla nothing feels crowded. Runners-up include; Maundays Bay, Meads Bay, Rendezvous Bay, Merrywing Bay, and Savannah Bay.

UNICEF Is Fighting To End Violence Against Women

What's great about Darkwood Beach is that there's not a single building on it. It feels like an escape from reality. It's undeveloped but still easily accessible. Runners-up include; Valley Church Beach, Dickenson Bay, Runaway Bay, Ffrye's Bay, Crab Hill Bay, and Half Moon Bay.

I have visited this beach for over 15 years, and while it can often be crowded with a mix of East Coast beach lovers and Venezuelans, the sand and water keep me coming back for more. This is a special place that has become the ultimate getaway for so many people. Come as yourself and never be judged.

While not in the Caribbean I had to include this stunning island, owned by a fabulous couple David Hew and his husband Michael King and features one of the most spectacular beaches in the Bahamas.

Completely
secluded for privacy, this is one of the best retreats in the
world with
a barrier reef for snorkeling. Runners-up include; Stocking
Island,
Exumas with the swimming pigs, Old Bight Beach, Cat Island,
Old Fort
Bay, Nassau, Treasure Cay Beach, Abaco, Sand Dollar Beach,
Great Harbour
Cay, and Cabbage Beach, Paradise Island.

This is the most famous beach in Barbados and is surrounded by
cliffs
and lots of soft sand. Runners-up include Bathsheba Beach,
Dover Beach,
Mullins Beach, and St Peter.

Enjoy the feeling of seclusion on your own patch of perfect
beach,
while being close to all the happenings of the local village.
Take a
kayak out to see the sunset over Victoria's Peak, one of the
highest
mountains in Belize.

Not in the Caribbean but a major destination for superyachts
and
wealthy Caribbean island hoppers, the calm water and hidden
coves of
this stunning beach can sometimes get crowded but you can
venture
further down the beach for a secluded experience.

I have visited this beach as a cruise ship passenger on
multiple
occasions, and there is nothing better than drinking from the
Soggy
Dollar Bar and relaxing with friends on this charming island

paradise.

Runners-up include Sandy Spit, Loblolly Bay, Devil's Bay in Virgin

Gorda, Prickly Pear, Cane Garden Bay, Smugglers Cove, and Apple Bay in

Tortola

The beach measures only 5.5 miles, but its gorgeous clear waters and

coral sands have made it one of the top picks by magazines every year.

Located four hours from the capital city, San Jose this is a great beach for more laid back travelers where sloths are a regular part

of the scenery. The nearby town gets lively after dark.

This beach is about 2 miles of white sand with turquoise colored

water. Guardalavaca is known for its sporting activities such as

snorkeling, scuba diving, deep-sea fishing, tennis, windsurfing,

volleyball, catamaran sailing, and kayaking.

With its clear turquoise water, waving palm trees and white sandy

beach, Cas Abao is a true paradise. Located at the northwest coast of

Curaçao, the beach is ideal for swimmers with great reefs for snorkeling. Runners-up include Playa Knip, Westpunt, Playa Porto Mari,

Klein Curacao, and Groot Knip.

The reward at the end of this hike down a steep cliff to the beach below is a large waterfall crashing on the beach. One of the most

memorable beach experiences ever. Runner-up is Batibou Beach.

This spectacular secluded beach is one of the most beautiful in the Dominican Republic and has won many travel awards. The white sand beach stretches about five miles and remains very secluded, far away from any resorts or hotels. Best way to arrive is by ATV to this paradise. Runners-up include Saona Island and Playa Bavaro.

Taking Care of Your Mental Health in the Fitness Space

I can't recall a moment during my time working in the fitness industry where I didn't hate myself.

It seems ironic when you think about it. Fitness is supposed to be about health and living your best life possible. Why then, do we find ourselves stressed and anxious rather than inspired?

When you're living in a world that thrives on the concept of insufficiency it can be difficult to keep a healthy perspective on diet and exercise. It's not hard to see how disordered eating and mental health struggles can be associated with the fitness industry because of this.

Most of the articles in the top-selling fitness magazines play up

insecurities, encouraging us to jump on every latest trend to change all the things we dislike about ourselves. It's all about how much we can take away from our body, and how tracking everything we eat and do is necessary for any kind of noticeable progress. Physical activity becomes another gateway to feed disordered eating habits.

We use words like "dirty," "bad," and "cheating" to describe certain foods or the consumption of them, thinking it's an innocent way of reminding ourselves to eat better. In reality, this kind of language is quite harmful to our mental state.

Giving any kind of negative association to the food we eat implies there is something wrong with indulging in it. It's like a form of self-manipulation, because we are making ourselves feel bad for things we have no reason to feel bad about. If you've ever experienced genuine guilt for ordering off the dessert menu, you know what I'm talking about.

We celebrate antisocial habits and withdrawal from friends and family due to restrictive eating in the name of "health," leading to even higher irritability levels from a lack of involvement in the activities we would normally enjoy participating in.

The cycle seemingly never ends.

Suffering in Silence

Eating disorders are just one aspect of the mental health strains endured in a world dominated by images and numbers. For those of us who suffer from depression, anxiety, obsessive-compulsive disorder (OCD), or any other kind of mental illness, the drive to adhere to these numbers and constraints we have created for ourselves is exhausting.

Unfortunately, mental illness tends to fly under the radar and to get pushed to the backburner when we are working hard to achieve our goals.

Think of it like a credit card statement that we're embarrassed to talk about. While we don't want to acknowledge its existence, we know it's there. It builds and becomes more daunting, until it grows totally out of control. Yet we're afraid to address it.

Those who suffer from anxiety or depression are more likely to develop an eating disorder as a result of their altered mental state. So if you already suffer from mental illness, you are at a risk of making things worse when you start to involve more calculated measures of control over what you eat and how you exercise [9,11].

That being said, there is still a great amount of stigma that

surrounds mental illness, which can make it difficult for some people to be open about what they are going through in order to seek help.

Suffering in silence usually means that we find a different way of coping. When that comes in the form of extreme diet swings and over-exercising, it can be very damaging to our long-term physical and psychological health.

So what can we do to protect our mental health?

Luckily there are measures we can take to ensure we maintain a positive and healthy mindset in the face of the unattainable “perfection” society pushes on us. If any of the scenarios below sound like things you’ve experienced, here are some steps you can take to improve your self-image and mental health. Avoiding these pitfalls can help ensure that we live our healthiest life possible, free from guilt, disordered eating, and poor body image.

Pitfall 1: Obsessively Counting Calories and Macros

Studies have shown that there is a direct correlation between disordered eating and the overuse of calorie and macro tracking apps [1,7]. Try as we may to separate the two, when tracking your calories becomes an obsession it is difficult to see food in a positive light. Food isn’t just food anymore – it’s now observed as digits and nutritive

breakdowns.

Sometimes, too much knowledge in one area isn't necessarily a positive thing when you're using that knowledge for something destructive.

Solution: Eat Intuitively

If you cannot remember the last time you picked up an apple and ate it without automatically calculating the approximate number of carbs and sugars inside of it, it may be time to put down that tracking app [8].

We were born knowing how to eat, and we gradually lost that ability over time through outside influence. So let's take it back to the basics – next time you have a meal, think of some basic guidelines for how to make it nutritious, pick an item from each food group (protein, fat, carbohydrates), and be sure to include fruits and vegetables. Eat slowly, eat mindfully, and choose foods you actually enjoy eating.

The emotional and social aspect of eating is an integral part of our livelihood. Food should satisfy you, energize you, and bring you happiness. Try not to overthink it.

Pitfall 2: Exercising to Burn Calories Rather Than to Promote a Healthy

Lifestyle

While exercise can help relieve some depressive symptoms and decrease anxiety, more is not always better; exercising can have detrimental effects on your physical and mental state when done to excess [2,4,10].

I can't tell you the amount of times I used to go for a run just because I had a bite of cake when I didn't "earn" it, or when it wasn't a part of my meal plan. If I didn't find a way to burn away my transgressions, my anxiety would soar and I would panic. Exercise became nothing more than a way for me to assume control when other parts of my life felt like they were in a downward spiral.

Solution: Exercise to Get Stronger, Move Better, and Feel Better

Set your focus on building strength and stamina. Think of exercising to improve your overall health rather than simply using it as a tool to create a bigger dietary deficit. Exercise for longevity – it should never be a form of punishment or something you feel obligated to partake in out of shame.

Find something you love to do, whether that is weightlifting, snowboarding, tennis, hiking, running, swimming, team sports, martial arts, or anything else you can think of! Exercise should be enjoyable,

and an integral part of your self-care.

Pitfall 3: Following Too Many Fitness or Fashion Model Accounts on Social Media

Now,
don't get me wrong: just like anyone, I certainly love to admire a
beautiful model from time to time. However, now that we have higher
access to these images at a moment's notice, it can cause us
to create
extremely unrealistic standards for ourselves.

We tend to compare ourselves more to those we see in photos
than
those we observe through other media, such as television, due
to the
fact that photos can be retouched and filtered to perfection
[3,5,6].
This unhealthy comparison can lead to unhappiness in our lives
as well
as the lives of those around us, because it affects our
interactions
with them and ultimately our quality of life. We don't realize
how many
of those images are doctored up, and that the person behind
them is just
another human with their own doubts and insecurities.

Solution: Be Mindful of the Images You Surround Yourself With

Next time you are about to hit the "follow" button on Instagram, ask yourself a few questions:

- 1. Does this person offer something of value to my life?*
- 2. Does this person make me feel good about myself?*

3. *Does this person have a good message?*
4. *Does this person promote a healthy image and lifestyle?*
5. *Does this person promote unrealistic standards?*

If you are following people simply for the sake of scrolling through their feed and admiring their seemingly perfect body, face, and life, just do yourself a favor: don't.

If the person you are following makes you feel insecure, jealous, or bad about yourself, do not continue following them. There is nothing wrong with looking up to someone who inspires you, but make sure they inspire you for the right reasons.

Pitfall 4: Using Negative Self-Talk

Every time we say something negative about ourselves, it becomes more of a reality in our minds.

Words are powerful, and while we could be using them to lift ourselves up, sadly so many of us use them to put ourselves down.

It's not always so obvious, but you'd be surprised how much of an effect it can have on your self-esteem and physical progress long term to continue talking down on yourself, even if you're doing so in a humorous, self-deprecating way.

Solution: Refer to Yourself Lovingly

It's time to drop the self-deprecation – your life isn't a "Roast Yourself Challenge."

Next time you refer to yourself, take a moment to consider the words you intend to use. If what you are about to say is negative, find a different word to use to describe yourself – even if it sounds silly when you say it, and even if it's exactly opposite of how you feel. I call it, "The Antonym Game" – for every bad word I would use to describe myself, I replace it with a more positive, contrasting expression.

It's not necessarily about positive affirmations. Sometimes it's just about challenging yourself to transform your negative talk into something positive or neutral. The better you get at doing this, the more it inherently sticks in your mind.

Pitfall 5: Believing Your Mental Health Is Secondary to Your Physical Health

When we think of taking care of ourselves, we usually refer to caring for our physical bodies and appearance, putting our mental health to the side. However, the two are not mutually exclusive.

Mental health is just as important as physical health, and it is difficult to have one without the other. Eventually, something has got to give. We invest so much in caring for what our body looks like on the outside, while on the inside we wither away.

Solution: Take Care of Your Mental Health

Mental health is the backbone of our entire well-being. Without this kind of self-care, everything else falls to the wayside.

Take time to relax every day, and practice mindfulness. When you are feeling overwhelmed, step back and breathe. Take time to acknowledge when you are not feeling well, and do whatever is necessary to centre yourself and help yourself feel better.

If needed, seek professional help for your mental health. There is never shame in having someone to talk to who can help us make healthier choices and find new balance in our life. These problems can be tough to tackle on our own.

When we take care of our mental health, we take care of our body the best way that we know how. One cannot thrive without the other.

Above all else, remember that numbers do not define you. The moment we relinquish the need for absolute control is the moment we allow ourselves to open up and heal. The path to recovering from mental illness begins with your mindset. Some of us may battle with it for a lifetime, but all of us can take steps every day towards leading the best and healthiest life we possibly can.

Recognize when there is a problem, and do whatever is necessary to achieve balance. Only then can we begin to end the cycle of harmful thought.

24 of the world's most amazing bridges

(CNN) – The Golden Gate Bridge in San Francisco took four years to build, costing \$35 million and finally opened in 1937. It has remained one of the engineering world's most famous poster boys since. But it's not the only bridge that merits celebration. Here are 23 others (plus San Fran's Golden Gate) that are worth a look.

1. Golden Gate Bridge: San Francisco, United States

A-list celebrity in the bridge world. Now over 75 years old, San Francisco's Golden Gate Bridge is arguably the most recognizable bridge in the world. While some may not be inspired by the industrial age suspension bridge design, it is undeniable that the San Francisco we know today would not be the same without its skyline being graced by this beauty.

2. Sydney Harbour Bridge: Sydney, Australia

Good to look at, better to climb.Cameron Spencer/Getty Images AsiaPac/Getty ImagesNicknamed “The Coat Hanger” by Sydney locals because of its arch-based design, the Sydney Harbour Bridge opened in 1932 and is a focal point of Aussie pride and celebrations.For aspiring bridge climbers, BridgeClimb offers people just that. Every year for New Year’s Eve the bridge itself is used to complement fireworks displays creating various effects like smiley faces and a disco ball.

3. Ponte Vecchio: Florence, Italy

A slice of ancient Italy in modern-day Italy.GABRIEL BOUYS/AFP/AFP/Getty ImagesA

Medieval bridge over the Arno River, the Ponte Vecchio is mainly known

for its shops of jewelers, art dealers and souvenir sellers and for

being Europe’s oldest stone, closed-spandrel segmental arch bridge.Regardless,

the Ponte Vecchio Brige is gorgeous and has a rich history dating back

to the time of the Romans. During World War II the bridge was not

destroyed by the Nazis – unlike many other bridges in Europe – under

an express order from Adolf Hitler.

4. Brooklyn Bridge: New York City, United States

Bagels, bars and Brooklyn Bridge: a New York trifecta.STAN HONDA/AFP/AFP/Getty ImagesCompleted in 1883, the Brooklyn Bridge is one of the oldest suspension bridges in the United States. A National Historic Landmark, the Brooklyn Bridge is

an iconic feature of New York.

5. Gateshead Millennium Bridge: Gateshead, England

Trying to make up for North England's weather. ANDREW YATES/AFP/Getty Images The Gateshead Millennium Bridge is the world's first and currently only tilting bridge. But the most amazing thing about this pedestrian and biker crossing of the Tyne River is that it appears as if an eye is winking whenever it is raised and lowered. Its innovative and unique design has won loads of awards since Queen Elizabeth officially opened it in 2002. It was lowered into place by Europe's largest floating crane – Asian Hercules II.

6. Tsing Ma Bridge: Hong Kong, China

Shortcut to a dim sum lunch. Courtesy Johnny Lai/Creative Commons/Flickr Hong Kong's Tsing Ma Bridge is the largest suspension bridge in the world to feature two decks and carry both road and rail traffic. Not only that, but it was subjected to some serious wind tunnel testing as Hong Kong is subject to powerful typhoons. After costing \$920 million (HK\$7.2 billion), the Tsing Ma Bridge opened in 1997. There are no walkways on the bridge and it features sheltered carriageways on the lower deck when very strong winds prove to be too much for vehicles to safely handle. Related content 10 of the world's longest bridges of various types

7. Akashi-Kaikyo or Pearl Bridge: Kobe-Naruto, Japan

Two kilometers of Japanese efficiency GYRO PHOTOGRAPHY/amanaimages/Corbis The Pearl Bridge currently holds the title of "World's Longest Suspension Bridge" with a span of 1,991 meters. The second longest is

China's

Xihoumen Bridge.A

modern engineering feat, the Pearl Bridge has remained the world's

longest since 1998. The Pearl Bridge stood a true test of strength even

before it opened when it survived the Kobe Earthquake on January 17,

1995.

8. Hangzhou Bay Bridge: Zhejiang, China

Thirty-five kilometers long, each one impressive.Courtesy Frank Tong/Creative Commons/FlickrConnecting the Chinese municipalities of Jiaxing and Ningbo in Zhejiang province, the 35-kilometer-long Hangzhou Bay Bridge is the longest trans-oceanic bridge in the world. More than 600 experts spent nine years designing the Hangzhou Bay Bridge.

9. Nanpu Bridge: Shanghai, China

Not "Bladerunner," but still as memorable.Courtesy Brian Brake/Creative Commons/FlickrKnown for its funky and innovative spiral approach, Shanghai's Nanpu Bridge designers came up with the novel idea to save space. When you can't build out, build up.

10. Tower Bridge: London, England

London's connection to the 19th century.Paul Gilham/Getty Images Europe/Getty ImagesA

combined bascule and suspension bridge in London, England, spanning the

River Thames, the Tower Bridge was opened on June 30, 1894 by The

Prince of Wales. It is among the top iconic landmarks in a city filled

with iconic landmarks.One of the final scenes of the Hollywood

blockbuster “Sherlock Holmes” is played out on the bridge in the movie’s climax.

11. Pont du Gard Aqueduct: Gard, France

Showing why Rome wasn’t built in a day. Patrick Aventurier/Getty Images

No bridge list is complete without at least one aqueduct constructed by

the Roman Empire. Pont du Gard is believed to have been built between 19

BC and 150 AD. It was constructed entirely without the use of mortar

and the aqueduct’s stones – weighing up to six tons – were precisely

cut to fit perfectly together eliminating the need for mortar.

12. Royal Gorge Bridge: Canon City, Colorado, United States

Indiana Jones’ favorite place to hang out. Courtesy Patrick

O’Donnell The Royal Gorge Bridge is the world’s highest suspension bridge at 359 meters above Arkansas River. Not

surprisingly, it attracts a lot of jumpers. But they all pack parachutes. Related content The most spectacular footbridges

around the world

13. Seri Wawasan Bridge: Putrajaya, Malaysia

Don’t be dazzled – watch the road. Courtesy Syed Abdul Khaliq/Creative Commons/Flickr

An absolutely gorgeous bridge design. This one gets in on beauty points alone.

14. Lupu Bridge: Shanghai, China

The world’s longest steel-arch bridge. LIU JIN/AFP/AFP/Getty

ImagesLupu

Bridge in Shanghai gets a spot on this list because at 3,900 meters it is the world's longest steel-arch bridge, and it also provides an amazing vantage point overlooking the old 2010 Shanghai World Expo site.

15. Millau Viaduct: Tran Valley, France

Visually clinical, yet appealingREMY GABALDA/AFP/Getty ImagesThe world's highest vehicular bridge, the Millau Viaduct traverses land not water, though when the fog rolls in, crossing the Millau can feel like crossing the sky. The bridge's construction set three world records.

16. Vasco da Gama Bridge: Lisbon, Portugal

Difficult to take a bad photo here.PATRICIA DE MELO MOREIRA/AFP/AFP/Getty ImagesThe Vasco da Gama spans the Tagus River near Lisbon, capital of Portugal and was built to ease traffic congestion and provide easier access to the 1998 World Fair along the banks of the Tagus. It isn't the longest, it isn't the tallest, but it sure is pretty.

17. Khaju Bridge: Isfahan, Iran

Walks don't come more romantic than this.Courtesy Ninara/Creative Commons/FlickrRemarkable views, a useful design that regulates the flow of the river

and it has
lasted (built around 1650). The Khaju Bridge should be on any
bridge
fanatic's must-see list.

18. The Wind and Rain Bridge: Sanjian County, China

Art as engineering.Courtesy Anja Disseldorp/Flickr/Creative CommonsThe Wind and Rain Bridge on the Linxi River of Sanjiang County is gorgeous. Built in 1916 to resemble a rainbow, the builders used no nails or rivets but instead dovetailed thousands of pieces of wood.Related content12 spectacular new bridges that break the mold

19. Sunniberg Bridge: Klosters, Switzerland

The Sunniberg Bridge was
built in 1998 and won the Outstanding Structure Award in 2001
for its
“aesthetically pleasing appearance and innovative design.”

20. Stari Most: Mostar, Bosnia and Herzegovina

Proving big is not always best.Courtesy Petr Kadlec/Creative Commons/FlickrA
16th-century bridge in the city of Mostar, Bosnia and Herzegovina, the
Sari crosses the river Neretva. The bridge stood for 427 years until it
was destroyed in the Bosnian war in 1993. It was later rebuilt and
reopened in 2004. It is traditional for the young men of the town to
leap from the bridge into the Neretva.

21. Szechenyi Chain Bridge: Budapest, Hungary

Good to look at, great for stunts. ATTILA KISBENEDEK/AFP/AFP/Getty Images
The Szechenyi Chain Bridge has loads of character. Opened in 1849, it truly put the “Buda” into the “Pest” as it connected the two sections of the city. In 2001, Hungarian stunt pilot Peter Besenyei flew upside down under the bridge.

22. New Brunswick Hartland Bridge: New Brunswick, Canada

About as cute as a bridge can get. Courtesy Dennis Jarvis/Creative Commons/Flickr
The world’s longest covered bridge might not look like much compared to some of the other mega structures featured here, but covered bridges have a unique charm. Some covered bridges are also only one lane, such as this Hartland Bridge in New Brunswick, Canada, so for those crossing there’s always a certain amount of excitement to be had.

23. The Confederation Bridge: Prince Edward Island, Canada

Not much to see, so no excuse for bad driving. courtesy Cadian Tourism
Spanning the Abegweit Passage of Northumberland Strait, and linking Prince

Edward Island with mainland New Brunswick, Canada, the Confederation

Bridge is the longest bridge over ice in the world. It is not dainty, it is strong, imposing, sturdy and muscular. Probably

the bridge where we would least like to run out of gas. Since the

bridge's opening in 1997, potato production on Prince Edward Island has

increased dramatically.

24. The Helix Bridge: Marina Bay, Singapore

Clever, beautiful and inspiring. Courtesy Urban Redevelopment Authority Singapore's

double helix bridge is 280 meters long, made of a special stainless

steel, lovingly assembled over two years with great precision.

Despite

being just two years old is already being touted as an architectural

marvel and engineering feat.

How to Choose a Barbell vintage gym barbell

"How on earth can you break a barbell?"

That was the question I was asking myself standing in my driveway with, well, a broken barbell...

Years ago, when I purchased my first barbell I didn't put much thought into type or quality. They are just barbells...right? That thinking (or lack thereof) led to my first barbell breaking within 24 hours of purchase.

Well, with broken barbell in hand I decided it was time to uncover some of the basics as to what makes a good, durable barbell. What I found was that they can range from \$200 to \$2,000, and they are a little more complicated than your average sporting goods store would have you believe. A barbell serves as the foundation of true strength training. You can get by without a lot of things, but you cannot get by without a barbell.

Buying the right bar will help you to avoid big issues – they can warp, bend, rust, and break. The most common bar mishaps are bending from missed lifts, and sleeves popping off from, more or less, cheap manufacturing. Today, I want to make you an informed consumer of the barbell.

Before you can truly make an informed decision you need to know exactly what a barbell consists of – its “anatomy.”

A commonly used barbell has a 28-29 mm diameter shaft for men and 25 mm for women. Barbells come in all shapes and sizes, but the standard

length is 7.2 ft for men and ~6.5 ft for women. They weigh ~44 pounds for men (20 kg) and ~33 pounds for women (15kg).

First, you have the bar itself, or shaft. It's put through a machining process to get it to the right length and diameter.

On the shaft, you have what is called knurling. Knurling is simply the rough, cross-hatched pattern you see on a barbell. Knurl is very

important and is mainly for grip. It is machine-pressed and can be

extremely rough, or smooth, depending on the manufacturer. It is

important to feel the bar to get an idea of what you like (unless you

buy online – in that case, look at reviews), but most top-end bar

manufacturers have a good knurl. Where knurling can differ, even on

top-end bars, is where the knurl does and does not exist. Some bars have

knurling that extends all the way to the sleeves, and some bars have a

gap of no knurling where the bar meets the sleeves. Sometimes bars will

have center knurling and sometimes they won't. You have to decide what

you want and what you are most comfortable with.

If, say, you like Olympic lifting and you prefer a wide snatch grip, I

suggest getting a bar with knurling that extends to the sleeves (if

that sentence made no sense, then don't worry about knurling going to

the sleeves).

If you are often shirtless or do high-rep front squats and presses (CrossFit anyone?), you may want to go with no center knurling. If you regularly squat heavy weights and need the bar to grip the back, get the center knurling.

Furthermore, the markings on the knurl indicate which type of bar you are using. I recommend a dual marked bar for general purpose use.

However, the outermost marking indicates an Olympic lifting bar and the inner marking indicates a powerlifting bar, and we'll talk more about those in a minute.

It comes down to how it meets your needs and style of fitness.

Next, we have the sleeves.

The sleeves are simply where you put the weights. They are created from drawn-overmandrel (DOM) tubing, a machine process that makes the sleeves straight and strong. The biggest thing you are looking for in the sleeves is the rotation, or how the sleeves spin on the shaft.

Unless you are extremely picky, or a professional lifter, the difference in bearings or bushings aren't that important. Bushings are a low friction material placed between the shaft and the sleeve – they are

more affordable, and they are what you will find on most bars.

Needle

bearings spin more smoothly, and are actual bearings between the shaft

and the sleeve. Generally, bearings are on the high end bars.

Bushings

will save you a lot of money, and work perfectly fine, without having to

go high-end. But, if you want the premium, then go bearings.

Bearings

are better – you aren't paying more without reason – but the difference

would only be noticed at the professional and elite levels.

Sleeves are also connected by bolts or snap rings. I will make this

one very easy for you. Snap rings only! Stay away from bolts on a bar!

Bolts = broken in 24 hours.

Also, know barbells come in many finishes – chrome, zinc, black

oxide, unfinished, and even stainless steel – but also know that the

finish is primarily an aesthetic preference. Stainless steel does

provide an advantage because it is rust and corrosion free, forever.

Barbell Strength

At this point, you already know more than your average gym-goer, but let's make you a true barbell connoisseur.

The strength of a barbell is very important. You need to know the

terms I am about to go over because when you shop for a barbell, this is

the information manufacturers will give you. If you have no idea what the numbers are referring to, how do you know what to buy?

Bar strength is reported in three areas: tensile strength, yield strength, and test.

Tensile strength is the maximum load your bar can support without fracturing or breaking. So high tensile strength = good bar. This will be your primary determining factor.

Yield strength is basically how much weight the bar can handle before it will become deformed – that is, it won't return to perfect straightness. Breaking and deformation are very different. Unfortunately, you will be hard-pressed to find a manufacturer that provides yield strength information.

There is also test, which means the bar has been loaded and tested with weights at which there was no bending or breaking, so the higher, the better. It's best if you can find a manufacturer that will give you a tensile strength rating, which is reported in pounds per square inch (PSI).

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Now you know the terminology, but what is a “good” rating? Here is a starting point for the most important factor – tensile strength ratings:

- <150,000 PSI = Ehh
- 150,000-175,000 PSI = Good
- 175,000-200,000 PSI = Better
- >200,000 PSI = Best

A bar in the good range is perfectly acceptable and will last a very long time. Considering cost and quality, most people do not need more than the “good” level bar.

If you are getting into sport weightlifting, there are differences in Olympic lifting bars and powerlifting bars:

- Olympic weightlifting bars have more of a whip, or spring, to accommodate the sport.
- Powerlifting bars are very stiff, as powerlifters prefer no surprises or major fluctuations during a big lift.

Barbell Plates

Next, you have to think about plates. Unless you plan on competing at the professional level, plate quality is not as vital as the quality of your barbell.

Price can vary greatly with plates. You can get 300 lb. of iron at a garage sale for \$30 or you can spend \$3,000+ on a couple hundred pounds of certified competition bumper plates.

The most frequently asked question is whether to purchase bumper plates or iron (metal) plates, and that depends on the type of lifting you plan to do. If you like powerlifting (squat, bench press, and

deadlift), then you will be just fine with iron plates. If you are dropping the bar frequently during CrossFit workouts or practicing the snatch and clean and jerk in Olympic weightlifting, you'll need bumpers.

Personally, I prefer a blend of iron and bumper plates in my arsenal, and I'll explain why and some considerations in just a minute. First, let's talk bumper plates.

When it comes to bumper plates, what you are paying for is the thickness of the plate and how much they bounce when dropped.

Here is a quick breakdown of their categories:

- Black bumpers (\$): Thick with a big bounce
- Colored bumpers (\$\$): Thick with less bounce
- Olympic training bumpers (\$\$\$): Thin and dead bounce
- Competition bumpers (\$\$\$\$\$\$): Thin and dead bounce + certified weight to the gram

They all should be 450mm disks with a 50mm opening. Economy black bumper plates are going to be good enough for 95% of people; 4.9% will want/need colored bumpers or Olympic training bumpers, and .1% will need certified Olympic competition bumpers. Colored plates generally follow a color coding, and some companies do follow the color code of the International Weightlifting Federation, but not all do. The official color coding can be found at the IWF website.

I like to have around 300 lb. of cheap iron plates along with another couple hundred pounds of black bumpers. I use the bumpers for when I am going to be dropping the weight, and I use a combination of iron and

bumpers if I am doing a heavy back squat.

You'll be hard pressed to find bumper plates at a garage sale, so you will need to order them online, but iron plates are a completely different story.

For iron, here's where you use the power of Craigslist to find a lot of weight for pennies on the dollar. People are constantly moving, giving up on at-home fitness, and letting plates sit in their garage and rust. That's a win for us! The easiest way to shop for plates is to put it on autopilot using a combination of Craigslist and IFTTT; you can read about how that works [here](#). Basically, you set up a program that will notify you when plates come up for sale in your price range.

Conclusion

Most people are looking for a general, high-quality bar, and there are plenty out there that are suitable for all training and that will last for a long time. So, unless you are planning on becoming an Olympian, I would stay away from the "Cadillac" bars. You can get a good barbell that will meet all of your needs for around \$250, and the near-perfect bar for around \$500.

That can seem like a lot of money for a barbell, but it is the heart of your training, and you will be using it day-in and day-out. Don't get a bar that will bend or fail while you are using it.

Get a bar that will last a lifetime. It is an investment in

your fitness and your health!

And that, gentlemen is all you need know about plates, weights, and barbells.

Now, let's start your story differently than mine.

"How on earth can this barbell withstand this abuse?"

That will be the question you are asking yourself while standing in your driveway with, well, an amazing barbell.

Ahead of Super Bowl, Trump Raises Doubts on Tackle Football for His Son

ATLANTA

— Hours before the sport's biggest game, President Trump joined the growing ranks of parents anxious over tackle football, saying in an interview he "would have a hard time" letting his 12-year-old son play.

"I mean, it's a dangerous sport and I think it's, I, it's really tough" if his son wanted to take up the game, Mr. Trump said in an interview with CBS ahead of its Sunday evening broadcast of the Super Bowl.

The president's concerns are at odds with his previous criticism that the N.F.L. has been making the game too soft to avoid concussions

and other injuries, and suggest that he is struggling with many of the same questions that parents across the country are asking about the safety of youth tackle football.

Mr. Trump said he would ultimately let his youngest son, Barron, who plays soccer, decide if he wanted to play tackle football and would not steer him away from the sport.

But the president said he had seen reports about the dangers of playing tackle football, and heard that some N.F.L. players were not letting their sons play tackle football.

His comments added another wrinkle to his ambivalent relationship with the game he often celebrates, but also laments. His doubts about the safety of the game come five years after President Barack Obama said that if he had a son, he would not let him play professional football. You have **4 free articles** remaining. Subscribe to The Times

Some studies have suggested that playing tackle football before age 12 puts athletes at a higher risk of developing cognitive problems later in life, but the issue has not been widely studied. In general, there has been growing awareness of C.T.E., a degenerative brain disease many former players have developed from repeated hits to the head.

As a result of such concerns, participation in flag football has exploded.

Yet while Mr. Obama held a forum at the White House on the

dangers of concussions, Mr. Trump has repeatedly said the N.F.L. is being overprotective.

In September 2017, for instance, Mr. Trump complained that the N.F.L. was ruining the game because the referees were trying to control unnecessarily rough tackles.

“Today if you hit too hard – 15 yards! Throw him out of the game!” he said, adding: “They’re ruining the game! They’re ruining the game. That’s what they want to do. They want to hit. They want to hit! It is hurting the game.”

At a campaign rally in 2016, Mr. Trump referred to a woman in the audience who fainted, but returned to the crowd.

“The woman was out cold and now she’s coming back,” he said. “See? We don’t go by these new, and very much softer, N.F.L. rules. Concussion. Oh, oh! Got a little ding on the head. No, no, you can’t play for the rest of the season. Our people are tough.”

Trump also called the N.F.L. “soft” for penalizing helmet-to-helmet hits.

In the CBS interview, however, he sounded more cautionary notes.

“I hate to say it, because I love to watch football,” Mr. Trump said. “I think the N.F.L. is a great product, but I really think that as far as my son – well, I’ve heard N.F.L. players saying they wouldn’t let their sons play football. So, it’s not totally unique, but I, I

would have a
hard time with it.”

Robots will control everything you eat

It starts with a seed. That seed – maybe it’s a tomato seed – gets
planted into the ground. Then it grows. And grows. Slowly, the
plant
pierces through the soil, emerging into the light. Weeks to
months
later, this seed becomes a plant, waist-high, bearing dozens
of ripe
tomatoes. Someone picks the fruit and packs it into a box.
Someone else
ships those boxes to warehouses where a restaurant or grocery
buys the
tomatoes. Later, a cook will take one, cut it up and put it in
a salad.

Today,
this process is still pretty low tech. Sure, there are cars
and trucks
involved, but robotics? Not as much. People are still key
players at
every step. But that may change, and soon.

“There are major
technologies coming in the next 10 years to make each part of
farming
more efficient, more productive and hopefully healthier and

less

expensive,” says Dan Steere. He heads up a company called Abundant Robotics in Menlo Park, Calif.

In other words, robots increasingly are going to play roles in growing and preparing our food.

By

time the time kids in middle school become adults, the entire food

cycle may be robotic. Even now, robots help farmers. Some plant fruits,

vegetables and grains in a more efficient way. Soon, they’ll help

harvest that food more quickly. Some food warehouses already have

self-driving trucks. Robots will even help get that food onto our

plates. In fact, a robot named Sally is already doing just that. The

goal is to make the way food is produced and prepared faster, easier and

more efficient.

Getting seeds in the ground

Every

field has some areas that are naturally less fertile than others.

Farmland may not be level, either. It can have areas that rise or are

lower than their surroundings. There may even be ditches. Plowing evens

out the ground somewhat, but never completely. If a creek runs through a

field, there’s always going to be land near that creek where it’s

difficult – or impossible – to plant. Soil quality also varies throughout a field.

All of these things can impact how much food the land can produce and how good that food will taste. And the amount of food produced affects how much money a farmer makes.

Math helps farmers calculate how many seeds to plant and where. But land also changes over time, so these calculations must be done over and over again every year.

A quadcopter drone moves over a farm, taking pictures from the air. This can map the quality of the soil, any crops and even pests. [ackabl/Flickr](#) (CC-BY-SA 2.0)

Theo Pistorius is head of a company called DroneClouds. It's in Cape Town, South Africa. His is one of many companies using drones to help farmers know where to plant. *Drone* is slang for *unmanned aerial aircraft* – a flying robot. The craft that DroneClouds uses has five cameras. Pistorius says each camera “is essentially [like] a camera on an iPhone.” But not a normal iPhone. He says think of each as “a very specialized, aerial iPhone, with a very specialized, calibrated camera.”

As

the drone's cameras fly overhead, they take pictures of the land. These show field size and the different lays of the land. They also reveal soil variation and any irrigation problems. They even show where insects and fungus might cause problems.

Next, DroneClouds processes those images to create a map of the field and what's growing in it. "We then do analyses to interpret it for the farmer," explains Pistorius. If the images come from an apple orchard, for instance, they might look at how the trees are growing. They'll note where tall weeds might cause a brand new tree to struggle.

A farmer in Zimbabwe holds a drone used for aerial crop mapping. This is just one of the ways in which robots are becoming involved in food production. International Maize and Wheat Improvement Center/Flickr (CC-BY-NC-SA 2.0)

To pinpoint problems, analysts compare these pictures to others of the same crop. This is called *comparative analysis*. Pistorius says it's like running a race, then comparing your time today to what it was earlier in the season. That lets you measure how much you've improved. But runners also compare their time against other runners. So farmers compare pictures of their field to those of other farmers. This is known as a *signature-based analysis*.

“The ideal pictures come from labs all across the world,” Pistorius says.

“Every four years, scientists from the Agricultural Research Commission

meet with labs [in the United States], and take a bunch of signatures.” This way farmers in both countries can help each other.

Picking fruit

Consistently monitored, the little plants grow. Day after day, the sun rises and falls. Sometimes it shines, other times there’s rain. Finally, harvest time arrives. And with it comes new, cutting-edge work in farm robotics.

For two years, Abundant Robotics has been developing a robot that picks apples. Two years? Isn’t picking apples easy?

Not if you’re a robot.

To understand why apple picking is hard for a machine, let’s break down the process. When you see an apple hanging on a tree, your eyes send a signal to your brain. The brain processes the data in this signal – such as the apple’s color and where it is on the tree. Instinctively, you’ll know when the apple’s ready to pick. Your brain then tells your arm to reach out and your hand to pull the fruit away from its branch. You hold

the apple like you would a bird – gently enough not to bruise it, but firmly enough that it doesn't fall away.

For people, picking an apple is so easy, even a kid can do it. But for robots, this simple activity used to be impossible.bubutu-/iStockphoto

When you pick an apple, you make all these decisions quickly. But if you needed to pick an entire field's worth of apples, it would take a very, very long time. After you picked one apple, you'd have to put it in a basket. The next apple would go in there, too, and the next, until your basket was full. Then down the ladder you'd go, where you'd have to empty your basket before climbing back up to start again.

Doing this for hundreds of trees would be incredibly time consuming. That's why people are seeking help from robots. When Abundant Robotics is done, farmers will be able to plant more trees. And they won't be worried about part of their crop rotting in the field because people weren't able to pick it all in time.

The first problem Abundant Robotics had to solve was acquiring the right signals. "If you don't have a good pair of eyes, it's hard to do a lot of tasks in the real world," Steere says. So the company had to give their robot what Steere calls

“a better pair of eyes.” This system – and how it connects to a robot’s brain – is known as *computer vision*. Computer vision helps the robot see “every surface of an apple,” says Steere, in addition to judging its size, color and weight. It can even scout for any defects in the fruit. Such systems are rapidly improving what robots can do.

Yet even with super eyes, the apple robot still had to learn how to physically pick the fruit without hurting it. In robotics, movement is called *animation*. Steere says, “Heavy animation damages the fruit.” If it bruises the apple or cuts through the skin, the fruit may look bad and likely won’t sell. Rough handling also can damage trees.

So the robot must coordinate its vision and motor skills. Think back to the apple-picking process: You have to know which apple to pick. You have to pick it quickly and gently. But what else? You can’t disturb apples on the tree that still need time to grow. “The vision has to ... recognize fruit,” Steere says, and “recognize whether it’s ripe or not.” And it has to do all that in a fraction of a second.

“People have wanted to automate this type of agriculture for decades. It’s just never been possible,” he says. Even after two years, his team’s work

still is not done! Abundant's robot won't go on sale until later this year. Developing great tech is like farming – it takes patience.

Sorting the harvest

Coffee berries come in many colors. A new robot can quickly sort the good ones from the bad. [Bongal965/iStockphoto](#)

Once the crop been picked, good fruit must be sorted from the bad. That's what a company called [best360](#) does. Instead of apples, its robot works with cocoa, nuts, cardamom (a spice) and coffee cherries (the fruit that holds coffee beans). Daniel Jones heads the company, based in Denver, Colo.

Take those coffee cherries. "The farmers would harvest their coffee and place it in our machine," Jones explains. "Then the machine drops [the fruit] through a visioning system." Picture a waterfall of cherries falling. That's what the machine stares at, all the while taking pictures of the passing fruit. The robot then uses those pictures to sort good coffee cherries from bad.

Machine vision and computer vision are essentially the same thing. Abundant and [best360's](#) robots do different tasks. Still, the same core technology helps both of them do it.

Before building a robot, engineers draw a design of what it

will look like. This is the design for bext360's coffee robot. Garrett Ziegler

Both

robots also need more than computer vision to succeed. Vision can tell

bext360's robot how to sort, but then the robot actually has to do it.

Farmers harvest coffee cherries – up to 30 kilograms (66 pounds) – from

one section of their field at a time. Then they load cherries holding

some 18,000 beans into a chute on top of the robot.

Within about 3

minutes, the robot will have individually sorted every cherry.

To do

that, the robot has to take a picture of each one. Then it analyzes them

all in a mere 22 milliseconds or so. "We'll know everything about them

in that split second that they fall through [the chute]," says Jones.

Puffs of air then push the cherries into different bins – one for good

fruit, another for rejects.

After the coffee cherry falls, the

robot shares its analysis with the farmer. "The main things [the robot

measures] are size and color and density," says Jones. It also checks

the inside and outside of the cherry for signs of rot or disease. This

is why farmers only put cherries from one part of their field in at a

time. This information helps them know if something they tried in one

part of a field worked better than something they tried elsewhere.

The robot from bext360 is still new: Sales only started about six months ago.

Onto the plate

Picked,
analyzed and sorted, a harvest now goes to a warehouse. One day, it
might get there in a self-driving semi-truck. And a self-driving
forklift might move the pallets off the truck and onto another that is
destined for a restaurant or store. Amazon already has a grocery store
just for employees that doesn't have any human stockers or check-out
clerks: They're all robots.

This forklift doesn't need a driver. It can drive itself.
[StraSSenBahn/Wikimedia Commons \(CC-BY-SA 3.0\)](#)

Finally,
the food might end up with our last robot: Sally. Sally makes salads.
From the outside, she looks like a box. There's a touchscreen and a hole
where a bowl can be placed. Inside, though, this robot's more complicated. "Sally is a box with the robotic components on the inside,"
notes Deepak Sekar. He heads up Chowbotics, in Redwood City, Calif.
It's the company that makes Sally.

"There are cylinders inside the
robot that are filled with prepped ingredients,"
Sekar explains. People

activate Sally by pressing the touchscreen. Diners can customize their salads by calorie count and ingredients.

At \$30,000 per robot, Sally isn't designed to be used at home. Chowbotics sells the robot to schools and offices, which use Sally in cafeterias and breakrooms.

Observes Sekar: "We hear all the time that students in schools don't

like eating from salad bars." Why? Sekar claims they're gross.

"Because

all the ingredients are inside Sally, you don't have to wonder if

someone sneezed on the tomatoes an hour ago – ew!," he says.

"Your salad

is always fresh and healthy."

Robots aren't in every part of

the field-to-plate process yet. But soon they will be. This will make

the food process cooler for us. Even more importantly, robots could one

day even out the world's food supply. Think about it: Today, DroneClouds

helps farmers know how to plant more. bext360 helps them know how to

plant more efficiently. Abundant Robotics helps growers harvest more

quickly – which means farmers can plant more. Then Chowbotics stores

that produce in a healthier way.

Says Steere, "If there was ever a

time [for] a young person going into farming – this has gotta be one of

the most amazing times in history. The kind of things that

automation

can do is going to continue to change and to evolve quickly.”