

**John Hancock Funds II
Disciplined Alternative Yield Fund (the fund)**

Supplement dated January 10, 2020 to the current Summary Prospectus (the Summary Prospectus), as may be supplemented

At its in-person meeting held on December 10 – 12, 2019, the Board of Trustees of John Hancock Funds II (the Board) approved the closing and liquidation of the fund pursuant to a Plan of Liquidation approved by the Board. The Board determined that continuation of the fund is not in the best interests of the fund or its shareholders as a result of factors or events adversely affecting the fund's ability to conduct its business and operations in an economically viable manner. The fund generally will not accept orders to purchase shares of the fund beginning on or about January 13, 2020, except at the fund's sole discretion, certain accounts affiliated with the fund's advisor may continue to purchase shares of the fund after that date. On or about February 12, 2020, the fund will distribute pro rata all of its assets to its shareholders, and all outstanding shares will be redeemed and cancelled.

For more information, please call John Hancock Investment Management at 800-225-5291.

You should read this Supplement in conjunction with the Summary Prospectus and retain it for your future reference.

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John Hancock Disciplined Alternative Yield Fund

Summary prospectus 1/1/20

Before you invest, you may want to review the fund's prospectus, which contains more information about the fund and its risks. You can find the fund's prospectus and other information about the fund, including the Statement of Additional Information and most recent reports, online at jhinvestments.com/Forms/Prospectuses.aspx. You can also get this information at no cost by calling 800-225-5291 (Class A and Class C) or 888-972-8696 (Class I and Class R6) or by sending an email request to info@jhinvestments.com. The fund's prospectus and Statement of Additional Information, both dated 1/1/20, as may be supplemented, and most recent financial highlights information included in the shareholder report, dated 8/31/19, are incorporated by reference into this summary prospectus.

Effective 1/1/21, as permitted by Securities and Exchange Commission regulations, paper copies of your fund's shareholder reports will no longer be sent by mail, unless specifically requested. They will be available on a website, and a notice with a link to the report will be mailed to you each time a report is posted to the site. Any prior requests for electronic delivery will not be affected. At any time, Fund shareholders may elect to receive paper or electronic copies of shareholder reports and other communications, free of charge by calling John Hancock Investment Management at 800-225-5291 (Class A and Class C) or 888-972-8696 (Class I and Class R6), or by contacting your financial intermediary. Your election to receive paper reports will apply to all funds held with John Hancock Investment Management or your financial intermediary.

TICKERS

A: JTRAX C: JTRCX I: JTRIX R6: JTRRX

INVESTMENT OBJECTIVE

The fund creates alternative yield instruments which are built by creating positions that consist of owning a long stock position and short in-the-money call option. Through these alternative yield positions, the fund seeks long-term capital appreciation with a high degree of downside protection and reduced volatility relative to the broad U.S. equity market.

FEES AND EXPENSES

This table describes the fees and expenses you may pay if you buy and hold shares of the fund. You may qualify for sales charge discounts on Class A shares if you and your family invest, or agree to invest in the future, at least \$50,000 in the John Hancock family of funds. Intermediaries may have different policies and procedures regarding the availability of front-end sales charge waivers or contingent deferred sales charge (CDSC) waivers (See Appendix 1 - Intermediary sales charge waivers, which includes information about specific sales charge waivers applicable to the intermediaries identified therein). Although the fund does not impose any sales charges on Class I shares, you may pay commissions to your broker on your purchases and sales of Class I shares, which are not reflected in the table and example below. More information about these and other discounts is available from your financial representative and on pages 18 to 20 of the prospectus under "Sales charge reductions and waivers" or pages 162 to 165 of the fund's Statement of Additional Information under "Sales Charges on Class A, Class B, and Class C Shares."

Shareholder fees (%) (fees paid directly from your investment)	A	C	I	R6
Maximum front-end sales charge (load) on purchases, as a % of purchase price	5.00	None	None	None
Maximum deferred sales charge (load) as a % of purchase or sale price, whichever is less (on certain purchases, including those of \$1 million or more)	1.00	1.00	None	None
Small account fee (for fund account balances under \$1,000) (\$)	20	20	None	None
Annual fund operating expenses (%) (expenses that you pay each year as a percentage of the value of your investment)	A	C	I	R6
Management fee	1.20	1.20	1.20	1.20
Distribution and service (Rule 12b-1) fees	0.30	1.00	0.00	0.00
Other expenses	0.38	0.38	0.38 ¹	0.27 ¹
Acquired fund fees and expenses ²	0.02	0.02	0.02	0.02
Total annual fund operating expenses³	1.90	2.60	1.60	1.49
Contractual expense reimbursement ⁴	-0.01	-0.01	-0.01	-0.01
Total annual fund operating expenses after expense reimbursements	1.89	2.59	1.59	1.48

¹ "Other expenses" have been restated to reflect contractual changes in custody and transfer agency fees.

² "Acquired fund fees and expenses" are based on indirect net expenses associated with the fund's investments in underlying investment companies.

³ The "Total annual fund operating expenses" shown may not correlate to the fund's ratios of expenses to average daily net assets shown in the "Financial highlights" section of the fund's prospectus, which does not include "Acquired fund fees and expenses."

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4 The advisor contractually agrees to waive a portion of its management fee and/or reimburse expenses for the fund and certain other John Hancock funds according to an asset level breakpoint schedule that is based on the aggregate net assets of all the funds participating in the waiver or reimbursement. This waiver is allocated proportionally among the participating funds. During its most recent fiscal year, the fund's reimbursement amounted to 0.01% of the fund's average daily net assets. This agreement expires on July 31, 2021, unless renewed by mutual agreement of the fund and the advisor based upon a determination that this is appropriate under the circumstances at that time.

EXPENSE EXAMPLE

This example is intended to help you compare the cost of investing in the fund with the cost of investing in other mutual funds. Please see below a hypothetical example showing the expenses of a \$10,000 investment for the time periods indicated and then, except as shown below, assuming you sell all of your shares at the end of those periods. The example assumes a 5% average annual return and that fund expenses will not change over the periods. Although your actual costs may be higher or lower, based on these assumptions, your costs would be:

Expenses (\$)	A	C		I	R6
Shares		Sold	Not Sold		
1 year	682	362	262	162	151
3 years	1,066	808	808	504	470
5 years	1,474	1,379	1,379	870	812
10 years	2,610	2,934	2,934	1,899	1,779

PORTFOLIO TURNOVER

The fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs and may result in higher taxes when fund shares are held in a taxable account. These costs, which are not reflected in annual fund operating expenses or in the example, affect the fund's performance. During its most recent fiscal year, the fund's portfolio turnover rate was 81% of the average value of its portfolio.

PRINCIPAL INVESTMENT STRATEGIES

The fund seeks to achieve its investment objective, under normal circumstances, by primarily investing in U.S. equities and simultaneously selling a call option against those stocks. The call options will typically have a strike price lower than the current stock price, which is termed "in the money." This combination of long stock position and short in the money call option creates a yield instrument. Additionally, the fund can engage in writing out-of-the-money put options on U.S. equities. Writing out-of-the-money put options is analogous to buying the stock and selling the call option with the same strike price and generally achieves the same result. These two strategies are equivalent in terms of risk/reward due to put-call parity. In making investment decisions, the manager ordinarily analyzes estimates of "intrinsic value" (i.e., the potential downside volatility level) and correlation between such estimates and time to expiration, as well as potential returns relative to risk.

The strike price of the call options is usually set at or below the estimated intrinsic value level of the securities against which they are sold and the time to expiration of the options that the fund sells varies. The fund may also write (sell) in-the-money call options on equity indexes and/or exchange-traded funds and write call options on individual securities that it does not hold in its portfolio (i.e., naked call options).

The issuers of equity securities purchased by the fund will primarily have market capitalizations in excess of \$2 billion. The fund may invest in companies located both within and outside the United States (including in emerging markets). The fund may invest any percentage of assets in any one country, region or geographic area. The fund may invest in initial public offerings (IPOs) and in exchange-traded funds (ETFs). In addition to common stocks and other equity securities (such as preferred stocks, convertible securities, and warrants), the fund may use foreign currency forward contracts, options, stock index futures contracts, and other derivative instruments, primarily for the purpose of reducing the risks of individual equity positions and maximizing risk-adjusted returns, and may also be used to hedge broad market exposure. In addition to the use of written option contracts, the fund may use foreign currency forward contracts, other options, stock index futures contracts, other futures and forward contracts, swap agreements, variance swaps, convertibles and reverse convertibles, and other derivative instruments for hedging purposes or to enhance return. Variance swap agreements involve an agreement by the two parties to exchange cash flows based on the measured variance (or square of volatility) of a specified underlying asset.

The fund's investment process may result in an extremely high portfolio turnover ratio.

PRINCIPAL RISKS

An investment in the fund is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Many factors affect performance, and fund shares will fluctuate in price, meaning you could lose money. The fund's investment strategy may not produce the intended results.

During periods of heightened market volatility or reduced liquidity, governments, their agencies, or other regulatory bodies, both within the United States and abroad, may take steps to intervene. These actions, which could include legislative, regulatory, or economic initiatives, might have unforeseeable consequences and could adversely affect the fund's performance or otherwise constrain the fund's ability to achieve its investment objective.

The fund's main risks are listed below in alphabetical order, not in order of importance. *Before investing, be sure to read the additional descriptions of these risks beginning on page 6 of the prospectus.*

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Credit and counterparty risk. The counterparty to an over-the-counter derivatives contract or a borrower of fund securities may not make timely payments or otherwise honor its obligations.

Cybersecurity and operational risk. Cybersecurity breaches may allow an unauthorized party to gain access to fund assets, customer data, or proprietary information, or cause a fund or its service providers to suffer data corruption or lose operational functionality. Similar incidents affecting issuers of a fund's securities may negatively impact performance. Operational risk may arise from human error, error by third parties, communication errors, or technology failures, among other causes.

Economic and market events risk. Events in the U.S. and global financial markets, including actions taken by the U.S. Federal Reserve or foreign central banks to stimulate or stabilize economic growth, may at times result in unusually high market volatility, which could negatively impact performance. Reduced liquidity in credit and fixed-income markets could adversely affect issuers worldwide. Banks and financial services companies could suffer losses if interest rates rise or economic conditions deteriorate.

Equity securities risk. The price of equity securities may decline due to changes in a company's financial condition or overall market conditions.

Exchange-traded funds risk. An ETF generally reflects the risks of the underlying securities of the index it is designed to track. However, at times, an ETF's portfolio composition and performance may not match that of such index. A fund bears ETF fees and expenses indirectly.

Foreign securities risk. Less information may be publicly available regarding foreign issuers. Foreign securities may be subject to foreign taxes and may be more volatile than U.S. securities. Currency fluctuations and political and economic developments may adversely impact the value of foreign securities. The risks of investing in foreign securities are magnified in emerging markets. Any depositary receipts are subject to most of the risks associated with investing in foreign securities directly because the value of a depositary receipt is dependent upon the market price of the underlying foreign equity security. Depositary receipts are also subject to liquidity risk.

Hedging, derivatives, and other strategic transactions risk. Hedging, derivatives, and other strategic transactions may increase a fund's volatility and could produce disproportionate losses, potentially more than the fund's principal investment. Risks of these transactions are different from and possibly greater than risks of investing directly in securities and other traditional instruments. Under certain market conditions, derivatives could become harder to value or sell and may become subject to liquidity risk (i.e., the inability to enter into closing transactions). Derivatives and other strategic transactions that the fund intends to utilize include: foreign currency forward contracts, futures contracts, variance swaps, options, and swaps. Foreign currency forward contracts, futures contracts, options, and swaps generally are subject to counterparty risk. In addition, swaps may be subject to interest-rate and settlement risk, and the risk of default of the underlying reference obligation. Derivatives associated with foreign currency transactions are subject to currency risk. With naked short call positions, the writer of the option may have unlimited liability as the writer may be forced to purchase the stock for delivery at a significantly higher price than the strike price of the option.

High portfolio turnover risk. Trading securities actively and frequently can increase transaction costs (thus lowering performance) and taxable distributions.

Initial public offerings risk. IPO share prices are frequently volatile and may significantly impact fund performance.

Large company risk. Larger companies may grow more slowly than smaller companies or be slower to respond to business developments. Large-capitalization securities may underperform the market as a whole.

Liquidity risk. The extent (if at all) to which a security may be sold or a derivative position closed without negatively impacting its market value may be impaired by reduced market activity or participation, legal restrictions, or other economic and market impediments.

Preferred and convertible securities risk. Preferred stock dividends are payable only if declared by the issuer's board. Preferred stock may be subject to redemption provisions. The market values of convertible securities tend to fall as interest rates rise and rise as interest rates fall. Convertible preferred stock's value can depend heavily upon the underlying common stock's value.

Warrants risk. The prices of warrants may not precisely reflect the prices of their underlying securities. Warrant holders do not receive dividends or have voting or credit rights. A warrant ceases to have value if not exercised prior to its expiration date.

PAST PERFORMANCE

The following information illustrates the variability of the fund's returns and provides some indication of the risks of investing in the fund by showing changes in the fund's performance from year to year and by showing how the fund's average annual returns compared with a broad-based market index. Past performance (before and after taxes) does not indicate future results. The S&P 500 Index shows how the fund's performance compares against the returns of similar investments. All figures assume dividend reinvestment. Performance information is updated daily, monthly, and quarterly and may be obtained at our website, jhinvestments.com, or by calling 800-225-5291 (Class A and Class C), Monday to Thursday, 8:00 A.M.—7:00 P.M., and Friday, 8:00 A.M.—6:00 P.M., Eastern time, or 888-972-8696 (Class I and Class R6) between 8:30 A.M. and 5:00 P.M., Eastern time, on most business days.

A note on performance

Class NAV and Class C shares commenced operations on September 29, 2011 and June 27, 2014, respectively. Class A, Class I, and Class R6 shares commenced operations on December 30, 2013. Returns shown prior to a class's commencement date are those of Class NAV shares, except that they include any sales charges. Returns for Class A, Class C, Class I, and Class R6 shares would have been substantially similar to returns of Class NAV shares because each

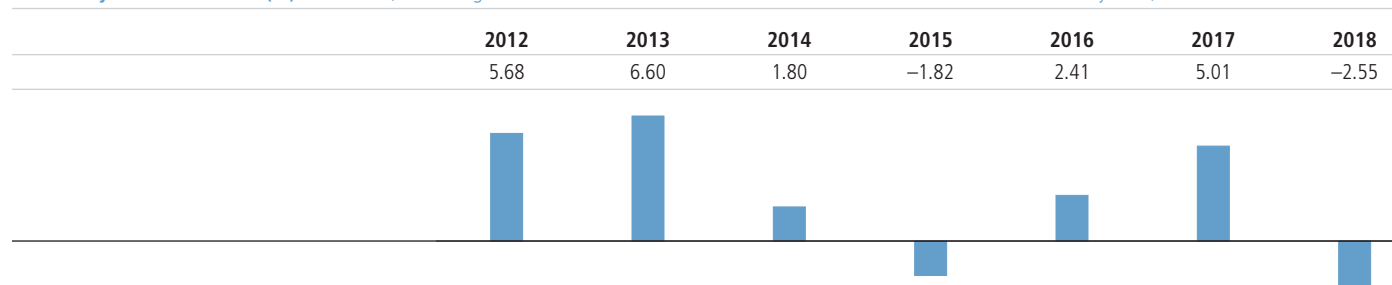
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share class is invested in the same portfolio of securities and returns would differ only to the extent that expenses of the classes are different. To the extent expenses of a class would have been higher than expenses of Class NAV shares for the periods shown, performance would have been lower.

Prior to March 14, 2014, the fund was managed by a different subadvisor, but not a different lead portfolio manager. The performance presented prior to this date should not be attributed to the current subadvisor. The current portfolio manager has been the lead portfolio manager of the fund since inception. As a result of the difference in subadvisor, the fund's performance shown below might have differed materially.

Please note that after-tax returns (shown for Class A shares only) reflect the highest individual federal marginal income-tax rate in effect as of the date provided and do not reflect any state or local taxes. Your actual after-tax returns may be different. After-tax returns are not relevant to shares held in an IRA, 401(k), or other tax-advantaged investment plan. After-tax returns for other share classes would vary.

Calendar year total returns (%)—Class A (sales charges are not reflected in the bar chart and returns would have been lower if they were)



Year-to-date total return. The fund's total return for the nine months ended September 30, 2019, was 8.20%.

Best quarter: Q1 '12, 4.51%

Worst quarter: Q4 '18, -5.64%

Average annual total returns (%)—as of 12/31/18	1 year	5 year	Since inception (09/29/11)
Class A (before tax)	-7.42	-0.10	2.21
after tax on distributions	-7.94	-1.04	1.35
after tax on distributions, with sale	-4.27	-0.36	1.44
Class C	-4.24	0.32	2.52
Class I	-2.22	1.25	3.17
Class R6	-2.18	1.38	3.26
ICE Bank of America Merrill Lynch 3 Month Treasury Bill Index (reflects no deduction for fees, expenses, or taxes)	1.88	0.63	0.46
S&P 500 Index (reflects no deduction for fees, expenses, or taxes)	-4.38	8.49	13.69

INVESTMENT MANAGEMENT

Investment advisor John Hancock Investment Management LLC

Subadvisor Boston Partners Global Investors, Inc.

PORTFOLIO MANAGEMENT

Todd G. Hawthorne

Portfolio Manager

Managed the fund since 2011

PURCHASE AND SALE OF FUND SHARES

The minimum initial investment requirement for Class A and Class C shares is \$1,000 (\$250 for group investments), except that there is no minimum for certain group retirement plans, certain fee-based or wrap accounts, or certain other eligible investment product platforms. The minimum initial investment requirement for Class I shares is \$250,000, except that the fund may waive the minimum for any category of investors at the fund's sole discretion. The minimum initial investment requirement for Class R6 shares is \$1 million, except that there is no minimum for: qualified and nonqualified plan investors; certain eligible qualifying investment product platforms; Trustees, employees of the advisor or its affiliates, employees of the subadvisor, members of the fund's portfolio management team and the spouses and children (under age 21) of the aforementioned. There are no subsequent minimum investment requirements for any of these share classes.

Class A, Class C, Class I and Class R6 shares may be redeemed on any business day by mail: John Hancock Signature Services, Inc., P.O. Box 55913, Boston, Massachusetts 02205-5913; or for most account types through our website: jhinvestments.com; or by telephone: 800-225-5291 (Class A and Class C); 888-972-8696 (Class I and Class R6).

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TAXES

The fund's distributions are taxable, and will be taxed as ordinary income and/or capital gains, unless you are investing through a tax-deferred arrangement, such as a 401(k) plan or individual retirement account. Withdrawals from such tax-deferred arrangements may be subject to tax at a later date.

PAYMENTS TO BROKER-DEALERS AND OTHER FINANCIAL INTERMEDIARIES

If you purchase the fund through a broker-dealer or other financial intermediary (such as a bank, registered investment advisor, financial planner, or retirement plan administrator), the fund and its related companies may pay the broker-dealer or other intermediary for the sale of fund shares and related services. These payments may create a conflict of interest by influencing the broker-dealer or other intermediary and your salesperson to recommend the fund over another investment. These payments are not applicable to Class R6 shares. Ask your salesperson or visit your financial intermediary's website for more information.

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